# **Analytical Data Package Prepared For**

# **Pacific Northwest National Lab**

Radiochemical Analysis By

# **STL Richland STLRL**

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Data Package Contains \_\_\_\_\_ Pages

Report Nbr: 33250

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04971	W06-007	B1JLJ8	J6G260132-1	H91MC2AA	9H91MC20	6237250
		B1JLK1	J6G260132-2	H91MR2AA	9H91MR20	6237250
		B1JLH6	J6G310193-1	JAC4R2AA	9JAC4R20	6237250
		B1JLH9	J6G310193-2	JAC4T2AA	<b>9JAC4T20</b>	6237250
	106-055	B1K649	Ј6Н010297-1	JAE5J1AA	9JAE5J10	6215544
		B1K649	Ј6Н010297-1	JAE5J1AC	9JAE5J10	6215539
	S06-007	B1JLB1	Ј6Н010299-1	JAE531AA	9JAE5310	6215544
		B1JLB1	Ј6Н010299-1	JAE531AC	9JAE5310	6215552
		B1JLB1	Ј6Н010299-1	JAE531AD	9JAE5310	6215554
	W06-008	B1K2Y1	Ј6Н010301-1	JAE591AA	9JAE5910	6215544
		B1K2Y1	Ј6Н010301-1	JAE591AC	9JAE5910	6215539
		B1K2Y5	Ј6Н010301-2	JAE6C1AA	9JAE6C10	6215544
		B1K2Y5	Ј6Н010301-2	JAE6C1AC	9JAE6C10	6215539
		B1K2Y9	Ј6Н010301-3	JAE6D1AA	9JAE6D10	6215544
		B1K2Y9	Ј6Н010301-3	JAE6D1AC	9JAE6D10	6215550

**Comments:** 

Report Nbr: 33250

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	ВАТСН
W04971	W06-008	B1K2Y9	Ј6Н010301-3	JAE6D1AD	9JAE6D10	6215539
		B1K2W3	Ј6Н010301-4	JAE6K1AA	9JAE6K10	6215544
		B1K2W3	Ј6Н010301-4	JAE6K1AC	9JAE6K10	6215550
		B1K2W3	Ј6Н010301-4	JAE6K1AD	9JAE6K10	6215539
		B1K2W7	Ј6Н010301-5	JAE6R1AC	9JAE6R10	6215550
		B1K2W7	Ј6Н010301-5	JAE6R1AD	9JAE6R10	6215539
		B1K2W7	Ј6Н010301-5	JAE6R1AE	9JAE6R10	6215544
		B1K303	Ј6Н010301-6	JAE6T1AA	9JAE6T10	6215544
		B1K303	Ј6Н010301-6	JAE6T1AC	9JAE6T10	6215550
		B1K303	Ј6Н010301-6	JAE6T1AD	9JAE6T10	6215539
	G06-007	B1JK54	Ј6Н010303-1	JAE6W1AA	9JAE6W10	6215544
		B1JK54	Ј6Н010303-1	JAE6W1AC	9JAE6W10	6215552
		B1JK54	Ј6Н010303-1	JAE6W1AD	9JAE6W10	6215554
		B1JK54	Ј6Н010303-1	JAE6W1AE	9JAE6W10	6215556
		B1JK54	Ј6Н010303-1	JAE6W1AF	9JAE6W10	6215555
		B1JK58	Ј6Н010303-2	JAE6X1AA	9JAE6X10	6215544
		B1JK58	Ј6Н010303-2	JAE6X1AC	9JAE6X10	6215552
		B1JK58	Ј6Н010303-2	JAE6X1AD	9JAE6X10	6215554
		B1JK58	Ј6Н010303-2	JAE6X1AE	9JAE6X10	6215556
		B1JK58	Ј6Н010303-2	JAE6X1AF	9JAE6X10	6215555
	106-055	B1K657	Ј6Н010305-1	JAE611AA	9JAE6110	6215544
		B1K657	Ј6Н010305-1	JAE611AC	9JAE6110	6215550
		B1K657	Ј6Н010305-1	JAE611AD	9JAE6110	6215539
		B1K688	Ј6Н010305-2	JAGEM1AA	9JAGEM10	6215544
		B1K688	Ј6Н010305-2	JAGEM1AC	9JAGEM10	6215550
		B1K688	Ј6Н010305-2	JAGEM1AD	9JAGEM10	6215539

Report Nbr: 33250

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04971	106-054	B1K542	Ј6Н010306-1	JAE651AA	9JAE6510	6215550
		B1K542	Ј6Н010306-1	JAE652AC	9JAE6520	6237250
		B1K543	Ј6Н010306-2	JAE661AA	9JAE6610	6215550
		B1K543	Ј6Н010306-2	JAE662AC	9JAE6620	6237250
	W06-008	B1K2X7	Ј6Н010307-1	JAE671AA	9JAE6710	6215544
		B1K2X7	Ј6Н010307-1	JAE671AC	9JAE6710	6215539
		B1K307	Ј6Н010307-2	JAE681AA	9JAE6810	6215539



#### STL Richland

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# **Certificate of Analysis**

Pacific Northwest National Laboratories Sigma V Building Richland, WA 99352

September 15, 2006

Attention: Dot Stewart

SAF Number : W06-007, I06-055, S06-007, W06-008, G06-007,

I06-054

Date SDG Closed : August 1. 2006 Number of Samples : Twenty (20) Sample Type : Water SDG Number : W04971

Data Deliverable : 45-Day / Summary

### **CASE NARRATIVE**

#### I. Introduction

Between July 25, 2006 and August 1, 2006, twenty water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

PGW ID#	STLR ID#	<b>MATRIX</b>	DATE OF RECEIPT
B1JLJ8	H91MC	WATER	7/25/06
B1JLK1	H91MR	WATER	7/25/06
B1JLH6	JAC4R	WATER	7/31/06
B1JLH9	JAC4T	WATER	7/31/06
B1K649	JAE5J	WATER	8/01/06
B1JLB1	JAE53	WATER	8/01/06
B1K2Y1	JAE59	WATER	8/01/06
B1K2Y5	JAE6C	WATER	8/01/06
B1K2Y9	JAE6D	WATER	8/01/06
B1K2W3	JAE6K	WATER	8/01/06
B1K2W7	JAE6R	WATER	8/01/06
B1K303	JAE6T	WATER	8/01/06
B1JK54	JAE6W	WATER	8/01/06

B1JK58	JAE6X	WATER	8/01/06	
B1K657	JAE61	WATER	8/01/06	
B1K688	JAGEM	WATER	8/01/06	
B1K542	JAE65	WATER	8/01/06	
B1K543	JAE66	WATER	8/01/06	
B1K2X7	JAE67	WATER	8/01/06	
B1K307	JAE68	WATER	8/01/06	

### II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

#### III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

### **Gas Proportional Counting**

Gross Alpha by method RICH-RC-5014 Gross Beta by method RICH-RC-5014 Strontium-90 by method RICH-RC-5006

### Gamma Spectroscopy

Gamma Spec by method RICH-RC-5017 Iodine-129 (LL) by method RICH-RC-5025

### **Liquid Scintillation Counting**

Technetium-99 by TEVA method RICH-RC-5065

Tritium by method RICH-RC-5007

### **Laser Induced Phosphorimetry**

Total Uranium by method RICH-RC-5058

### IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

### V. Comments

### **Gas Proportional Counting**

#### Gross Alpha by method RICH-RC-5014:

Samples B1JLB1, B1JK54, B1JK58 and B1JK58 DUP were analyzed with reduced volumes due to weight screen activity. B1JK54 does not meet the CRDL. Except as noted, the LCS, batch blank, samples and sample duplicate (B1JK58) results are within contractual requirements.

#### Gross Beta by method RICH-RC-5014:

A reduced volume was analyzed based on an elevated screen result for sample B1JK54. Except as noted the LCS, batch blank, samples and sample duplicate (B1JLB1) results are within contractual requirements.

#### Strontium-90 by method RICH-RC-5006

The MDA was elevated for samples B1JK54 and B1JK54 DUP due to the reduced aliquot size. The aliquot size was reduced on B1JK54 and B1JK54 DUP due to elevated activity screen results. Except as noted the LCS, batch blank, samples and sample duplicate (B1F9D9) results are within contractual requirements.

#### Gamma Spectroscopy

### Gamma Spec by method RICH-RC-5017:

The LCS, batch blank, samples and sample duplicate (B1JK54) results are within contractual requirements.

#### <u>Iodine-129 (LL) by method RICH-RC-5025:</u>

The LCS, batch blank, samples and sample duplicate (B1K2Y9) results are within contractual requirements.

#### **Liquid Scintillation Counting**

### Technetium-99 by TEVA method RICH-RC-5065:

The LCS, batch blank, samples, sample duplicate (B1K649), and sample matrix spike (B1K2X7) results are within contractual requirements.

#### Tritium by method RICH-RC-5007:

The LCS, batch blank, samples and sample duplicate (B1K657) results are within contractual requirements.

#### **Total Uranium**

#### Total Uranium by method RICH-RC-5058:

The samples were reanalyzed because the original batch blank was just at CRDL and there were some high samples. The reanalysis batch had acceptable results. Except as noted, the LCS, batch blank, samples, sample duplicate (B1JLJ8), and sample matrix spike (B1JLK1) results are within contractual requirements.

### Pacific Northwest National Laboratories September 15, 2006

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sherryl A. Adam

Project Manager

### **Drinking Water Method Cross References**

	DRINKING WATE	ER ASTM METHOD CROSS REFERENCES
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-24		
The Gross Beta LCS is prepared with Sr/Y-90	) (unless otherwise	specified in the case narrative)

### **Uncertainty Estimation**

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants \* f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties  $(u_i)$  are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty  $(u_c)$  multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

	Report Definitions
Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) $u_c$ _Combined Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, $u_c$ the combined uncertainty. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the <b>Work Order</b> Number.
RER	The equation Replicate Error Ratio = $(S-D)/[sqrt(TPUs^2 + TPUd^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

9/15/200	6 7:47:54 AM				S	TL Rich	ılar	id Repo	rt			I	Lab Code: STLRL	
FormNbr	: R	FormatType:	FEAD <b>Vers</b> i	ion: 05	Rpt N	<b>br:</b> 33250		File Name:	h:\Reportdb\	edd\FeadIV\Rad\W049	971.Edd, h:\Re	portdb\ed	d\FeadIV\Rad\33250.I	Edd
Lab Sample Id: 9H91MC20	Client Id: B1JLJ8	Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nb</b> r	Sdg Nbr: W04971	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		Ε	lection Date: 2006 10:01	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qua		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
5237250	Uranium	7440-61-1	5.48E+00	ug/L	5.6E-01	5.6E-01		8.38E-02		UTOT_KPA	2.50E-02	ML	09/05/2006 13:49	9 I
Lab Sample Id: 9H91MR20	Client Id: B1JLK1	Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nbr</b> W06-007	Sdg Nbr: W04971	QC Typ∈		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		r	lection Date: 2006 11:20	
Batch	Analyte	CAS#	Result	Unit (	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6237250	Uranium	7440-61-1	9.82E-03		1.2E-03	1.2E-03	U	8.35E-02	2	UTOT_KPA	2.51E-02	ML	09/05/2006 13:54	
Lab Sample Id: 9JAC4R20	Client Id: B1JLH6	Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nb</b> i	Sdg Nbr: W04971	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		E	lection Date: 2006 12:01	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6237250	Uranium	7440-61-1	4.08E+01		4.8E+00	4.8E+00	400	8.45E-02		UTOT_KPA	2.48E-02	ML	09/05/2006 13:59	
Lab Sample Id: 9JAC4T20	Client Id: B1JLH9	Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nb</b> r	Sdg Nbr: W04971	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			lection Date: 2006 13:25	***************************************
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
3237250	Uranium	7440-61-1	5.10E+00	ug/L	5.2E-01	5.2E-01		8.35E-02	2	UTOT_KPA	2.51E-02	ML	09/05/2006 14:01	1 I
Lab Sample Id: 9JAE5310	Client Id: B1JLB1	Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nb</b> i	Sdg Nbr: W04971	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:	-	Ε	lection Date: 2006 08:38	
Batch	Analyte	CAS#	Result	Unit (	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215544	H-3	10028-17-8	7.27E+02	pCi/L	1.6E+02	1.8E+02		3.33E+0	2 100.0	906.0_H3_LSC	5.00E-03	L	08/17/2006 04:56	6 I
6215552	ALPHA	12587-46-1	6.82E-01	pCi/L	1.2E+00	1.2E+00	U	2.56E+0	0 100.0	9310_ALPHABETA	1.852E-01	L	08/28/2006 17:49	<b>3</b> 1
6215554	BETA	12587-47-2	3.89E+01	pCi/L	3.1E+00	7.5E+00		2.55E+0	0 100.0	9310_ALPHABETA	1.997E-01	L	08/24/2006 16:31	1 1
Lab Sample Id: 9JAE5910	Client Id: B1K2Y1	Test User	Contract Nbr MW6-SBB-A1	SAF Nbi	Sdg Nbr: W04971	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		[	lection Date: 2006 09:31	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alg Size	Unit	Analy Date/Time	Act
6215544	H-3	10028-17-8	1.32E+03		1.8E+02	2.1E+02	- Lua	3.31E+0		906.0 H3 LSC	5.00E-03	L	08/17/2006 06:19	
6215539	TC-99	14133-76-7	2.51E+02	•	9.6E+00			9.98E+0		TC99_ETVDSK_LS		L	08/26/2006 11:41	

Sample Id: STL Richland

Lab

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

Distilled

Volume

Sample

On Date:

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

Moisture/

Solids%\*:

B Qual- Analyte was found in the associated laboratory blank above the MDC.

QC

Type:

Sdg

Nbr:

SAF Nbr

Contract

Nbr

Test

User

Collection

Date:

Client

ld:

9/15/2006 7:47:54 AM	STL Richland Report	Lab Code: STLRL
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FormNbi	r; R	FormatType:	FEAD <b>Vers</b>	ion: 05	Rpt N	<b>br:</b> 33250		File Name:	h:\Reportdb\	edd\FeadIV\Rad\W049	71.Edd, h:\Rep	ortdb\ed	ld\FeadIV\Rad\33250.E	dd
9JAE5J10	B1K649		MW6-SBB-A1	106-055	W0497	1						08/01/2	2006 11:52	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215544	H-3	10028-17-8	7.50E+03	pCi/L	3.2E+02	4.7E+02		3.31E+0	2 100.0	906.0_H3_LSC	5.00E-03	L	08/17/2006 03:33	1
6215539	TC-99	14133-76-7	1.44E+03	pCi/L	2.1E+01	1.1E+02		9.78E+0	0 100.0	TC99_ETVDSK_LS	1.255E-01	L	08/26/2006 11:41	1
Lab Sample Id: 9JAE6110	Client Id: B1K657	Test User	Contract Nbr MW6-SBB-A1	SAF N	or Sdg Nbr: W0497			Moisture/ Solids%*:	Distilled Volume			I	lection Date: 2006 09:57	
		0.40#					0	i MDA	Tankinid	8# -4h - J	A! C!			A - 4
Batch 6215544	Analyte H-3	<b>CAS#</b> 10028-17-8	Result 5.62E+03	<b>Unit</b> pCi/L	CntU 2S 2.8E+02	TotU 2S	Qua	I MDA 3.32E+0	TrcYield	Method 906.0_H3_LSC	Alq Size 5.00E-03	Unit L	Analy Date/Time 08/17/2006 21:28	Act
6215550	I-129L	15046-84-1	1.54E-01	pCi/L	1.4E-01	1.4E-01	U	2.94E-0		I129LL SEP LEPS			09/09/2006 13:03	
6215539	TC-99	14133-76-7	1.09E+03	pCi/L	1.4E-01 1.8E+01		U	9.88E+0		TC99_ETVDSK_LS		L	08/26/2006 11:42	
Lab Sample Id: 9JAE6510	Client Id: B1K542	Test User	Contract Nbr MW6-SBB-A1	SAF NI	or Sdg Nbr: W0497	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		[	lection Date: 2006 13:07	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alg Size	Unit	Analy Date/Time	Act
6215550	I-129L	15046-84-1	2.85E-02			1.0E-01	U	2.04E-0		I129LL_SEP_LEPS	•		09/09/2006 13:04	
Lab Sample Id:		Test User	Contract Nbr	SAF N	Nbr:	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		ſ	lection Date:	
9JAE6520	B1K542	2.10"	MW6-SBB-A1		W0497		_						2006 13:07	
Batch 6237250	<b>Analyte</b> Uranium	<b>CAS#</b> 7440-61-1	Result 1.50E+00	Unit ug/L	CntU 2S 1.5E-01	TotU 2S 1.5E-01	Qua	I MDA 8.22E-02	TrcYield 2	Method UTOT_KPA	<b>Alq Size</b> 2.55E-02	Unit ML	<b>Analy Date/Time</b> 09/05/2006 14:03	Act
Lab Sample Id: 9JAE6610	Client Id: B1K543	Test User	Contract Nbr MW6-SBB-A1	<b>SAF N</b> t 106-054	or Sdg Nbr: W0497	,.		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		[	lection Date: 2006 13:07	***************************************
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215550	I-129L	15046-84-1	-1.48E-02	pCi/L	1.4E-01	1.4E-01	U	2.63E-0	1 96.5	I129LL_SEP_LEPS	4.0058E+00	L	09/09/2006 14:51	1
Lab Sample Id:		Test User	Contract Nbr	SAF N	Nbr:	• • • • • • • • • • • • • • • • • • • •		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		I	lection Date:	
9JAE6620	B1K543	_ :	MW6-SBB-A1		W0497		_						2006 13:07	
Batch 6237250	<b>Analyte</b> Uranium	<b>CAS#</b> 7440-61-1	<b>Result</b> 9.13E-01	<b>Unit</b> ug/L	<b>CntU 2S</b> 9.3E-02	TotU 2S 9.3E-02	Qua	I MDA 8.25E-02	TrcYield 2	Method UTOT_KPA	<b>Alq Size</b> 2.54E-02	Unit ML	Analy Date/Time 09/05/2006 14:05	Act
Lab Sample Id: 9JAE6710		Test User	Contract Nbr MW6-SBB-A1	SAF N	or Sdg Nbr:			Moisture/ Solids%*:	Distilled Volume			[	lection Date: 2006 10:37	

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

9/15/2006 7:47:54 AM	STL Richland Report	Lab Code: STLRL

FormNbi	r: R	FormatType: F	EAD <b>Versi</b>	ion: 05	Rpt N	<b>br:</b> 33250		File Name:	h:\Reportdb\	edd\FeadIV\Rad\W049	71.Edd, h:\Rep	ortdb\ed	ld\FeadIV\Rad\33250.E	idd
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215544	H-3	10028-17-8	3.95E+03	pCi/L	2.5E+02	3.2E+02		3.28E+0		906.0_H3_LSC	5.00E-03	L	08/18/2006 00:13	- 1
6215539	TC-99	14133-76-7	1.17E+02	pCi/L	7.2E+00	1.4E+01		1.00E+0	1 100.0	TC99_ETVDSK_LS	1.256E-01	L	08/26/2006 11:42	1
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF N	or Sdg Nbr:	QC Type		Moisture/ Solids%*:	Distilled Volume	•			llection Date:	
9JAE6810	B1K307		MW6-SBB-A1	W06-008		٠.		001140701		J			2006 13:07	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215539	TC-99	14133-76-7	5.92E+02	pCi/L	1.4E+01	4.7E+01		9.75E+0	0 100.0	TC99_ETVDSK_LS	1.273E-01	L	08/26/2006 11:42	1
Lab Sample Id:		Test User	Contract Nbr	SAF N	Nbr:	• •		Moisture/ Solids%*:	Distilled Volume	•		l	llection Date:	
9JAE6C10	B1K2Y5									••			2006 10:56	
Batch 6215544	Analyte H-3	<b>CAS#</b> 10028-17-8	Result 3.99E+03	Unit pCi/L	CntU 2S	TotU 2S 3.2E+02	Qual	MDA 3.31E+0	TrcYield	Method 906.0_H3_LSC	Alq Size 5.00E-03	Unit L	Analy Date/Time 08/17/2006 07:41	Act I
6215539	TC-99	14133-76-7	6.19E+02	ρCi/L	1.4E+01			9.97E+0		TC99_ETVDSK_LS		L	08/26/2006 11:41	
	10-99	14133-70-7	0.196+02	POIL		4.96701		9.97 = +0	0 100.0		1.23L-01		00/20/2000 11.41	
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF NE	or Sdg Nbr:	QC Type		Moisture/ Solids%*:	Distilled Volume				llection Date:	
9JAE6D10	B1K2Y9	1	MW6-SBB-A1	W06-008	W0497	1						08/01/2	2006 12:16	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215544	H-3	10028-17-8	6.83E+03	pCi/L	3.1E+02	4.4E+02		3.31E+0	2 100.0	906.0_H3_LSC	5.00E-03	L	08/17/2006 09:04	
6215550	I-129L	15046-84-1	3.76E-02	pCi/L	1.5E-01	1.5E-01	U	2.84E-01	1 101.1	I129LL_SEP_LEPS	3.9274E+00	L	09/09/2006 09:30	-
6215539	TC-99	14133-76-7	5.85E+02	pCi/L	1.4E+01	4.7E+01		9.81E+0	0 100.0	TC99_ETVDSK_LS	1.264E-01	L	08/26/2006 11:41	ı
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF N	or Sdg Nbr:	QC Type		Moisture/ Solids%*:	Distilled Volume				llection Date:	
9JAE6K10	B1K2W3	I	MW6-SBB-A1	W06-008	W0497	1						08/01/2	2006 11:16	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215544	H-3	10028-17-8	4.49E+04	pCi/L	7.1E+02	2.0E+03		3.30E+0	2 100.0	906.0_H3_LSC	5.00E-03	L	08/17/2006 10:26	. 1
6215550	I-129L	15046-84-1	2.27E+00	pCi/L	4.4E-01	4.4E-01	U	7.06E-0	1 98.1	I129LL_SEP_LEPS	4.0025E+00	L	09/09/2006 11:17	1
6215539	TC-99	14133-76-7	8.87E+02	pCi/L	1.7E+01	6.8E+01		9.94E+0	0 100.0	TC99_ETVDSK_LS	1.248E-01	L	08/26/2006 11:41	ı
Lab Sample Id: 9JAE6R10	Client Id: B1K2W7	Test User	Contract Nbr MW6-SBB-A1	<b>SAF N</b> t W06-008	Nbr:			Moisture/ Solids%*:	Distilled Volume			1	llection Date: 2006 10:19	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6215544	H-3	10028-17-8	2.71E+03	pCi/L	2.2E+02			3.30E+0		906.0_H3_LSC	5.00E-03	L	08/17/2006 11:49	
6215550	I-129L	15046-84-1	-7.06E-03	pCi/L		1.1E-01	U	2.14E-0		I129LL_SEP_LEPS		L	09/09/2006 11:18	. 1
0210000		10010 011	1.00= 00	P0"L			~	22		· · · · · · · · · · · · · · · · · · ·		_		

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

9/15/200	6 7:47:54 AM	•			$\mathbf{S}$	ΓL Ricl	alan	d Repor	ct			]	Lab Code: STLRL
FormNb	r: R	FormatType: F	EAD <b>Versi</b>	on: 05	Rpt N	<b>br:</b> 33250		File Name: h	n:\Reportdb\	edd\FeadIV\Rad\W049	71.Edd, h:\Rep	ortdb\e	dd\FeadIV\Rad\33250.Edd
6215539	TC-99	14133-76-7	3.41E+02	pCi/L	1.1E+01	3.0E+01		9.97E+00	100.0	TC99_ETVDSK_LS	1.247E-01	L	08/26/2006 11:41
Lab Sample Id: 9JAE6T10	Client Id: B1K303	Test User	Contract Nbr MW6-SBB-A1	<b>SAF N</b> b	Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	•			llection Date: 2006 09:15
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA .	TrcYield	Method	Alq Size	Unit	Analy Date/Time Act
6215544	H-3	10028-17-8	4.97E+03	pCi/L	2.7E+02	3.6E+02		3.28E+02	100.0	906.0_H3_LSC	5.00E-03	L	08/17/2006 13:12 I
6215550	I-129L	15046-84-1	-4.13E-02	pCi/L	1.1E-01	1.1E-01	U	1.99E-01	100.3	I129LL_SEP_LEPS	4.0021E+00	L	09/09/2006 13:02 I
6215539	TC-99	14133-76-7	1.72E+02	pCi/L	8.3E+00	1.8E+01		1.00E+01	100.0	TC99_ETVDSK_LS	1.254E-01	L	08/26/2006 11:42 I
Lab Sample Id: 9JAE6W10	Client Id:	Test User	Contract Nbr MW6-SBB-A1	SAF Nb	r Sdg Nbr: W04971	QC Typ		Moisture/ Solids%*:	Distilled Volume	<u>-</u>			llection Date: 2006 09:47
Batch	Analyte	CAS#	Result			TotU 2S	Qual	MDA .	TrcYield	Method	Alq Size	Unit	Analy Date/Time Act
6215544	H-3	10028-17-8	4.99E+01	pCi/L	1.4E+02		U	3.30E+02		906.0_H3_LSC	5.00E-03	L	08/17/2006 18:43 I
6215552	ALPHA	12587-46-1	3.60E+00	pCi/L	2.8E+00			3.46E+00		9310 ALPHABETA		L	08/28/2006 17:49 I
6215554	BETA	12587-47-2	8.71E+03	pCi/L	6.1E+01			7.76E+00	100.0	9310_ALPHABETA	5.05E-02	L	08/24/2006 09:39 I
6215556	BE-7	13966-02-4	-1.49E+01	pCi/L	1.6E+01	1.6E+01	U	2.56E+01		GAMMA GS	2.5022E+00	L	08/23/2006 09:05 1
6215556	CO-60	10198-40-0	9.34E-01	pCi/L	2.0E+00	2.0E+00	U	4.30E+00	)	GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 1
6215556	CS-134	13967-70-9	1.84E-01	pCi/L	2.3E+00	2.3E+00	U	4.38E+00	)	GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 1
6215556	CS-137	10045-97-3	-1.77E+00	pCi/L	1.9E+00	1.9E+00	U	2.99E+00	)	GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 I
6215556	EU-152	14683-23-9	3.53E+00	pCi/L	5.2E+00	5.2E+00	U	9.97E+00	ı	GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 I
6215556	EU-154	15585-10-1	1.34E+00	pCi/L	4.7E+00	4.7E+00	U	1.02E+01		GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 I
6215556	EU-155	14391-16-3	-4.19E+00	pCi/L	6.3E+00	6.3E+00	U	1.06E+01		GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 I
6215556	K-40	13966-00-2	-1.31E+01	pCi/L	4.2E+01	4.2E+01	U	9.39E+01		GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 I
6215556	RU-106	13967-48-1	-4.18E+00	pCi/L	1.7E+01	1.7E+01	U	3.04E+01		GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 I
6215556	SB-125	14234-35-6	1.37E+00	pCi/L	5.6E+00	5.6E+00	U	8.97E+00	)	GAMMA_GS	2.5022E+00	L	08/23/2006 09:05 I
6215555	SR-90	10098-97-2	4.99E+03	pCi/L	3.4E+01	7.5E+02		2.17E+00	56.6	SRISO_SEP_PRE	5.016E-01	L	09/09/2006 12:22 I
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	•			llection Date:
9JAE6X10	B1JK58		MW6-SBB-A1		W04971		0	MDA :	T	9.4 - 4.1- a -d	Al- Ci-s		2006 10:22
<b>Batch</b> 6215544	Analyte H-3	<b>CAS#</b> 10028-17 <b>-</b> 8	Result -1.35E+02	Unit pCi/L	CntU 2S 1.3E+02	TotU 2S	Qual U	MDA 3.31E+02	TrcYield	Method 906.0_H3_LSC	<b>Alq Size</b> 5.00E-03	Unit L	Analy Date/Time Act 08/17/2006 20:05
6215552	n-3 ALPHA	12587-46-1	3.76E+00	pCi/L	2.0E+00		J	2.16E+00		9310 ALPHABETA		L	08/28/2006 17:49
6215554	BETA	12587-46-1	1.98E+03	pCi/L	2.0E+00 2.1E+01			2.10E+00 2.92E+00		9310_ALPHABETA		L	08/24/2006 17:38 I
02 10004	DETA	12001-41-2	1.800703	pC//L	Z. IETUI	Z.UL. TUZ		2.326700	100.0	9310_ALFHADLIA	2.004L-01	_	00/24/2000 17:00 1

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

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9/15/200	6 7:47:54 A	M			S	TL Rich	ılar	d Report				I	ab Code: STLR	L	
FormNb	r: R	FormatType: FE	EAD <b>Versi</b> o	on: 05	Rpt N	<b>br:</b> 33250		File Name: h:\Re	portdb\e	edd\FeadIV\Rad\W049	71.Edd, h:\Rep	ortdb\ed	d\FeadIV\Rad\33	3250.E	dd
6215556	BE-7	13966-02-4	-1.15E+01	pCi/L	1.1E+01	1.1E+01	U	1.77E+01		GAMMA_GS	2.4998E+00	L	08/23/2006 (	09:06	
6215556	CO-60	10198-40-0	6.27E-01	pCi/L	1.2E+00	1.2E+00	U	2.64E+00		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	l
6215556	CS-134	13967-70-9	1.13E+00	pCi/L	1.4E+00	1.4E+00	U	2.86E+00		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	1
6215556	CS-137	10045-97-3	-1.32E+00	pCi/L	2.0E+00	2.0E+00	U	3.78E+00		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	1
6215556	EU-152	14683-23-9	-6.31E-02	pCi/L	2.8E+00	2.8E+00	U	5.07E+00		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	I
6215556	EU-154	15585-10-1	2.37E+00	pCi/L	5.0E+00	5.0E+00	U	1.00E+01		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	I
6215556	EU-155	14391-16-3	7.12E-01	pCi/L	2.7E+00	2.7E+00	U	5.11E+00		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	١
6215556	K-40	13966-00-2	-3.21E+01	pCi/L	2.2E+01	2.2E+01	U	4.61E+01		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	١
6215556	RU-106	13967-48-1	5.93E+00	pCi/L	1.2E+01	1.2E+01	U	2.29E+01		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	1
6215556	SB-125	14234-35-6	2.35E+00	pCi/L	3.1E+00	3.1E+00	U	6.12E+00		GAMMA_GS	2.4998E+00	L	08/23/2006	09:06	I
6215555	SR-90	10098-97-2	8.68E+02	pCi/L	5.6E+00	1.3E+02		5.41E-01 76.	.2	SRISO_SEP_PRE	1.0007E+00	L	09/09/2006	12:48	I
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF N	or Sdg Nbr:	QC Type			istilled /olume	Sample On Date:			lection Date:		
9JAGEM10	B1K688	N	/W6-SBB-A1	106-055	W04971							08/01/2	2006 11:07		
<b>Batch</b> 6215544	Analyte H-3	<b>CAS#</b> 10028-17-8	Result 4.99E+03	<b>Unit</b> pCi/L	CntU 2S 2.7E+02	TotU 2S 3.7E+02	Qua	MDA TrcY 3.27E+02 100		Method 906.0_H3_LSC	Alq Size 5.00E-03	Unit L	Analy Date/Tir 08/18/2006 (		Act I
6215550	I-129L	15046-84-1	2.19E-01	pCi/L	1.3E-01	1.3E-01	U	3.14E-01 103		I129LL_SEP_LEPS	4.0081E+00	L	09/09/2006 1	14:53	ı
6215539	TC-99	14133-76-7	3.01E+03	pCi/L	3.0E+01			9.76E+00 100		TC99_ETVDSK_LS		L	08/26/2006 1	11:42	ı

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL). B Qual- Analyte was found in the associated laboratory blank above the MDC.

# STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK2Q1AB

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 11:52

UCL

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type: BLK

SAS Nbr

**Received Date:** 08/01/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 Test User Case Nbr

Decant

**Distilled Volume** 

File Id

BG Н

R

Batch # / Analyt/ CAS# Qc Type 6215539 TC-99

Result/ Orig Rst -1.83E+00

Tot/Cnt Unit **Uncert 2S** pCi/L 5.6E+00 3.9E+00

Qu-Tracer al MDC Yield 9.71E+00 100.0

Spk Conc/ %Rec

Suffix

Analy Method

Aliq Date/Time Size/ TC99 ETVDSK 1.271E-01

Analyzed 08/26/2006

RPD/ UCL RER/ LCS LCL/UCL Typ

D

FSuffix RTyp

11:42

14133-76-7 BLK

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

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STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK2V1AB

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 09:57

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%\*:

10028-17-8

QC Type:

**BLK** 

**Received Date:** 

08/01/2006

SAF Nbr

**Contract Nbr** MW6-SBB-A19981 **Test User** 

Case Nbr

SAS Nbr

Suffix

Decant

**Distilled Volume** 

File Id

FSuffix RTyp

BI Н

Batch # / Qc Type 6215544 H-3

BLK

Analyt/ Result/ CAS# Orig Rst 1.38E+02

Tot/Cnt **Uncert 2S** Unit pCi/L 1.6E+02 1.4E+02

Qu-Tracer MDC Yield al U 3.31E+02 100.0

Spk Conc/ %Rec

Analy Aliq Method 906.0 H3 LSC 5.00E-03

Size/

Date/Time Analyzed 08/17/2006 RPD/ RER/ UCL UCL

LCS R LCL/UCL Typ D

L 00:48 Friday, September 15, 2006 Lab Code: STLRL STL Richland QC Blank Report

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Sdg/Rept Nbr: W04971 JAK2V1DX 33250 Lab Sample Id: Collection Date: 08/01/2006 09:57

**WATER** Client Id: NA WATER Matrix: Sample On Date:

1.4E+02

Moisture/Solids%\*: 08/01/2006 QC Type: BLK **Received Date:** 

SAF Nbr **Contract Nbr Test User** SAS Nbr Suffix **Distilled Volume** File Id FSuffix RTyp Case Nbr Decant

MW6-SBB-A19981 BK Н

15:57

3

Batch # / Result/ Tot/Cnt RPD/ LCS Analyt/ Qu-Tracer Spk Conc/ Analy Aliq Date/Time RER/ R Qc Type CAS# Orig Rst Unit Uncert 2S al MDC Yield %Rec Method Size/ Analyzed UCL UCL LCL/UCL Typ 6215544 H-3 pCi/L 1.5E+02 1.45E+00 U 3.28E+02 100.0 906.0 H3 LSC 5.00E-03 08/17/2006 D

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. STL Richland J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

BLK

10028-17-8

### STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK311AB

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 07/26/2006 10:22

RER/

UCL

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%\*:

Analyt/

CAS#

12587-46-1

QC Type:

**BLK** 

**Received Date:** 

08/01/2006

SAF Nbr

Batch # /

Qc Type

BLK

Contract Nbr MW6-SBB-A19981

**Test User** 

Case Nbr

SAS Nbr

Suffix Decant **Distilled Volume** 

File Id

FSuffix RTyp BM

Н

D

R

6215552 ALPHA

Result/ Orig Rst

1.05E-01

Tot/Cnt Unit **Uncert 2S** pCi/L 3.4E-01

3.4E-01

Qu-MDC al U 8.82E-01

Tracer Yield 100.0

Spk Conc/ %Rec

Analy Method 9310 ALPHAB

Aliq Size/ 2.007E-01

Date/Time Analyzed 08/28/2006 RPD/ UCL

LCS LCL/UCL Typ

17:49

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

4

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK361AB

Sdg/Rept Nbr: W04971

SAS Nbr

33250

Collection Date: 07/26/2006 08:38

RER/

UCL

Client Id:

SAF Nbr

Batch #/

Qc Type

6215554

BLK

NA

Contract Nbr

Matrix:

**WATER** 

WATER

Decant

Sample On Date:

Moisture/Solids%\*:

Analyt/

CAS#

12587-47-2

QC Type:

Case Nbr

BLK

Suffix

Received Date:

08/01/2006

MW6-SBB-A19981

BETA

Result/ Orig Rst

1.30E+00

Tot/Cnt Unit Uncert 2S pCi/L 1.0E+00

**Test User** 

Qual U 9.8E-01

Tracer MDC Yield 1.86E+00 100.0

Spk Conc/ %Rec

Analy Method 9310 ALPHAB

Aliq Size/ 1.999E-01

**Distilled Volume** 

Date/Time Analyzed 08/24/2006 RPD/ UCL

File Id

LCS

BO

FSuffix RTyp

R LCL/UCL Typ D

Н

09:39

STL Richland rptFeadRadEdd v3.68

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK391AB

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/26/2006 09:47

Client Id:

NA

Matrix:

**WATER** 

**WATER** 

Sample On Date:

Moisture/Solids%\*:

10098-97-2

QC Type:

**BLK** 

Received Date:

08/01/2006

SAF Nbr

BLK

Contract Nbr MW6-SBB-A19981 **Test User** Case Nbr SAS Nbr

Suffix

Decant

**Distilled Volume** 

File Id

BQ Н

R

Batch #/ Analyt/ CAS# Qc Type 6215555 SR-90

Result/ Orig Rst 1.01E-01

Tot/Cnt Unit Uncert 2S pCi/L 2.2E-01 1.9E-01

Qu-MDC al U 4.61E-01

Tracer Yield 76.7

Spk Conc/ %Rec

Analy Method SRISO SEP P

Aliq Size/ 9.998E-01

Date/Time Analyzed 09/09/2006 RPD/ RER/ UCL UCL

LCS

FSuffix RTyp

LCL/UCL Typ D

L

11:04

STL Richland rptFeadRadEdd v3.68 U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

ug/L 1.1E-03

1.1E-03

U

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK3H2AB

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/25/2006 10:01

Client Id:

6237250 Uranium

BLK

NA

9.21E-03

Matrix:

**WATER** 

**WATER** 

UTOT\_KPA

Sample On Date:

09/05/2006

13:27

Moisture/Solids%\*:

7440-61-1

QC Type:

8.35E-02

BLK

**Received Date:** 

2.51E-02

ML

07/25/2006

SAF N	br Co	ontract Nbr	T	est User	Case N	br S	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id	1	FSuffix R	Тур
	MW	6-SBB-A19981												BS	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ

D

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK3P1AB

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 12:16

Client Id:

NA

Matrix:

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

**WATER BLK** 

Received Date:

08/01/2006

SAF Nbr

**Contract Nbr** MW6-SBB-A19981 Case Nbr

SAS Nbr

Suffix Decant **Distilled Volume** 

File Id

FSuffix RTyp BV

Н

R

Batch # / Analyt/ Qc Type CAS# 6215550 I-129L

Result/ **Orig Rst** -8.89E-02

Tot/Cnt Unit Uncert 2S pCi/L 1.1E-01

Qual MDC 1.78E-01

Tracer Yield 98.4

Spk Conc/ %Rec

Analy Method I129LL SEP L

Aliq Size/

Date/Time Analyzed 4.0002E+00 09/09/2006 RPD/ RER/ UCL UCL

LCS LCL/UCL Typ

15046-84-1 BLK

1.1E-01

**Test User** 

14:54

D

# STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\V\Rad\W04971.Edd, h:\Reportdb\edd\Fead\V\Rad\33250.Edd

Lab Sample Id:

JAK4A1AB

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/26/2006 09:47

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

7.

Moisture/Solids%\*:

OC.

QC Type: BL

BLK

**Received Date:** 08/01/2006

SAF Nbr Contract Nbr Test User Case Nbr SAS Nbr Suffix Decant Distilled Volume File Id FSuffix RTyp MW6-SBB-A19981

	MW6-	SBB-A19981												BX	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6215556	BE-7	2.70E+00	pCi/L	1.7E+01	U	3.03E+01			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	13966-02-4			1.7E+01						L	09:06				
6215556	CO-60	-1.68E-02	pCi/L	2.1E+00	U	3.95E+00			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	10198-40-0			2.1E+00						L	09:06				
6215556	CS-134	1.72E+00	pCi/L	2.0E+00	U	3.95E+00			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	13967-70-9			2.0E+00						L	09:06				
6215556	CS-137	3.56E-01	pCi/L	2.0E+00	U	3.59E+00			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	10045-97-3			2.0E+00						L	09:06				
6215556	EU-152	1.54E+00	pCi/L	4.6E+00	U	8.24E+00			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	14683-23-9			4.6E+00						L	09:06				
6215556	EU-154	-4.67E-01	pCi/L	5.7E+00	U	1.06E+01			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	15585-10-1			5.7E+00						L	09:06				
6215556	EU-155	5.58E-01	pCi/L	4.3E+00	U	7.66E+00			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	14391-16-3			4.3E+00						L	09:06				
6215556	K-40	-1.89E+01	pCi/L	5.4E+01	U	1.19E+02			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	13966-00-2			5.4E+01						L	09:06				
6215556	RU-106	-9.83E+00	pCi/L	1.5E+01	U	2.55E+01			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	13967-48-1			1.5E+01						L	09:06				
6215556	SB-125	2.70E+00	pCi/L	4.3E+00	U	8.14E+00			GAMMA_GS	2.50E+00	08/23/2006				D
BLK	14234-35-6			4.3E+00						L	09:06				

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%\*:

14133-76-7

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK2Q1CS

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 08/01/2006 11:52

Client Id:

NA

Matrix:

**WATER** 

**WATER** 

Sample On Date:

**Received Date:** 

08/01/2006

SAF Nbr

**Contract Nbr** MW6-SBB-A19981 **Test User** 

Case Nbr

QC Type:

MDC

BS SAS Nbr

Decant

**Distilled Volume** 

L

File Id

FSuffix RTyp BH Η

R

Batch # / Analyt/ Qc Type CAS# 6215539 TC-99

BS

Result/ **Orig Rst** 5.12E+02

Tot/Cnt Uncert 2S Unit pCi/L 4.2E+01 1.3E+01

Qual

Tracer Yield 9.87E+00 100.0

Spk Conc/ %Rec 5.40E+02 94.9

Suffix

Analy Aliq Method Size/ TC99 ETVDSK 1.25E-01

Date/Time Analyzed 08/26/2006 11:42

RPD/ RER/ UCL UCL

LCS LCL/UCL Typ 70

D 130

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\V\Rad\W04971.Edd, h:\Reportdb\edd\Fead\V\Rad\V33250.Edd

Lab Sample Id:

JAK2V1CS

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 09:57

Client Id:

NA

Matrix:

**WATER** 

**WATER** 

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

Received Date:

SAF		ntract Nbr S-SBB-A19981	T	Test User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id	***	<b>FSuffix</b> BJ	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R CL Typ
6215544	H-3	2.56E+03	pCi/L	2.6E+02		3.30E+02	100.0	2.72E+03	906.0_H3_LS	C 5.00E-03	08/17/2006			70	D
BS	10028-17-8			2.2E+02				94.0		L	02:11			130	

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\X33250.Edd

Lab Sample Id:

JAK2V1EM

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 09:57

Client Id:

NA

Matrix:

**WATER** 

**WATER** 

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

**Received Date:** 

SAF		Contract Nbr IW6-SBB-A19981	Т	est User	Case	Nbr SA	AS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix BL	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R CL Typ
6215544 <b>BS</b>	H-3 10028-17-	2.80E+03 8	pCi/L	2.7E+02 2.2E+02		3.29E+02	100.0	2.72E+03 102.9	906.0_H3_LS0	5.00E-03 L	08/17/2006 17:20			70 130	D

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%\*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK311CS

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 07/26/2006 10:22

Client Id:

NA

Matrix:

QC Type:

WATER

BS

WATER

Sample On Date:

08/01/2006 **Received Date:** 

						•									
SAF		ntract Nbr 6-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix I BN	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6215552 <b>BS</b>	ALPHA 12587-46-1	2.12E+01	pCi/L	5.3E+00 3.1E+00		8.43E-01	100.0	2.26E+01 93.7	9310_ALPHAE	3 2.02E-01 L	08/28/2006 18:57			70 130	D

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK361CS

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 07/26/2006 08:38

Client Id:

NA

Matrix:

**WATER** 

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

**Received Date:** 

SAF		tract Nbr SBB-A19981	Т	est User	Case	Nbr SA	S Nbr	Suffix	Decant I	Distilled Volume	File	e ld		FSuffix BP	RTyp H
	1010 0-	ODD-A19901												DI.	• • • • • • • • • • • • • • • • • • • •
Batch # /	Analyt/	Result/	11	Tot/Cnt	Qu-	MDO	Tracer	Spk Conc/	Analy	Aliq	Date/Time	RPD/	RER/	LCS	R
Qc Type	CAS#	Orig Rst	Unit	Uncert 2S	al	MDC	Yield	%Rec	Method	Size/	Analyzed	UCL	UCL	LCL/U	CL Typ
6215554	BETA	2.15E+01	pCi/L	3.3E+00		1.75E+00	100.0	2.26E+01	9310_ALPHAE	3 2.007E-01	08/24/2006			70	D
BS	12587-47-2			1.7E+00				95.0		L	09:39			130	

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK391CS

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/26/2006 09:47

Client Id:

NA

Matrix:

**WATER** 

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

Received Date:

SAF		ntract Nbr S-SBB-A19981	1	Test User	Case	Nbr S	AS Nbr	Suffix	Decant I	Distilled Volume	File	e ld		<b>FSuffix</b> BR	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ
6215555	SR-90	1.51E+01	pCi/L	2.4E+00		5.69E-01	66.2	1.37E+01	SRISO_SEP_F	2 1.00E+00	09/09/2006			70	D
BS	10098-97-2			7.7E-01				109.5		L	11:04			130	

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK3H2CS

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/25/2006 10:01

Client Id:

NA

Matrix:

**WATER** 

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

Received Date:

07/25/2006

SAF Nbr		ntract Nbr 6-SBB-A19981	Т	est User	Case	Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix 1 BT	RTyp H
	Analyt/ CAS# ranium 140-61-1	Result/ Orig Rst 3.39E+01	<b>Unit</b> ug/L	Tot/Cnt Uncert 2S 4.0E+00 4.0E+00	Qu- al	MDC 8.32E-		Spk Conc/ %Rec 3.58E+01 94.5	Analy Method UTOT_KPA	Aliq Size/ 2.52E-02 ML	Date/Time Analyzed 09/05/2006 13:45	RPD/ UCL	RER/ UCL	LCS LCL/UC 70 130	R CL Typ D

### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK3H2DS

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/25/2006 10:01

Client Id:

NA

Matrix:

WATER

**WATER** 

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

**Received Date:** 

07/25/2006

SAF		ontract Nbr 6-SBB-A19981		Test User	Case	Nbr S	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix F BU	<b>≀Typ</b> Η
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6237250 <b>BS</b>	Uranium 7440-61-1	3.37E+00	ug/L	3.4E-01 3.4E-01		8.35E-02	2	3.62E+00 93.1	UTOT_KPA	2.51E-02 ML	09/05/2006 13:47			70 130	D

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK3P1CS

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 08/01/2006 12:16

Client Id:

NA

Matrix:

**WATER** 

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

Received Date:

SAF		ntract Nbr i-SBB-A19981		est User	Case	Nbr S	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix F BW	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R CL Typ
6215550 <b>BS</b>	I-129L 15046-84-1	7.76E+00	pCi/L	1.0E+00 1.0E+00		3.36E-01	96.3	9.64E+00 80.5	I129LL_SEP_	L 4.0004E+00 L	09/11/2006 06:24			70 130	D

# STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAK4A1CS

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/26/2006 09:47

Client Id:

NA

Matrix:

**WATER** 

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

**Received Date:** 

				Contract Nbr T MW6-SBB-A19981		Test User		Case Nbr SA		Suffix	Decant	Distilled Volume	File Id			<b>RТур</b> Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ	
6215556 <b>BS</b>	CO-60 10198-40-0	3.21E+01	pCi/L	6.9E+00 6.9E+00		3.89E+00		3.03E+01 105.7	GAMMA_GS	2.5017E+00 L	08/26/2006 09:39			70 130	D	
6215556 <b>BS</b>	CS-137 10045-97-3	1.99E+01	pCi/L	5.9E+00 5.9E+00		4.93E+00		1.98E+01 100.6	GAMMA_GS	2.5017E+00 L	08/26/2006 09:39			70 130	D	
6215556 <b>BS</b>	EU-152 14683-23-9	6.98E+01	pCi/L	1.4E+01 1.4E+01		8.34E+00		6.13E+01 113.9	GAMMA_GS	2.5017E+00 L	08/26/2006 09:39			70 130	D	

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\V33250.Edd

Lab Sample Id:

H91MC2CR

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/25/2006 10:01

Client Id:

B1JLJ8

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

DUP

Received Date:

07/25/2006

<b>SAF I</b> W06-0		Contract Nbr MW6-SBB-A19981				est User	Case Nbr SA		SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id	FSuffix RTyp AW H		
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R _ Typ		
6237250 <b>DUP</b>	Uranium 7440-61-1	5.35E+00 5.48E+00	ug/L	5.5E-01 5.5E-01		8.35E-0	2		UTOT_KPA	2.51E-02 ML	09/05/2006 13:52	2.4 20.0	0.3 3		D		

# STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAE531ER

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 07/26/2006 08:38

Client Id:

B1JLB1

Matrix:

**WATER** 

**WATER** 

Sample On Date:

Moisture/Solids%\*:

QC Type:

DUP

Received Date:

		ntract Nbr	ract Nbr Test User		User Case Nbr		S Nbr	Suffix	Decant I	Distilled Volume	. File	File Id		FSuffix RTyp			
		S-SBB-A19981												AY	Н		
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R . Typ		
6215554	BETA	3.60E+01	pCi/L	5.9E+00		3.11E+00	100.0		9310_ALPHAE	3 1.999E-01	08/24/2006	7.7	0.7		D		
DUP	12587-47-2	3.89E+01		3.1E+00						I	16.31	20.0	3				

# STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAE5J1DR

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 08/01/2006 11:52

Client Id:

B1K649

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

**DUP** 

**Received Date:** 

SAF Nbr Contract Nbr I06-055 MW6-SBB-A1998			Test User		Case Nbr SA		SAS Nbr Suffix		Decant C	File Id		FSuffix RTyp AZ H			
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
	TC-99 14133-76-7	1.51E+03 1.44E+03	pCi/L	1.1E+02 2.1E+01		9.71E+00	100.0		TC99_ETVDSh	1.268E-01 L	08/26/2006 11:41	5.1 20.0	0.9 3	Г	)

# STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAE611ER

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 09:57

Client Id:

B1K657

Matrix:

WATER

**WATER** 

Sample On Date:

Moisture/Solids%\*:

QC Type:

DUP

**Received Date:** 

08/01/2006

SAF	Nbr Cor	ntract Nbr	7	est User	Case	Nbr SA	S Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix R1	ур
106-05	5 MW6	-SBB-A19981												BA	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6215544	H-3	5.34E+03	pCi/L	3.8E+02		3.28E+02	100.0		906.0_H3_LS0	C 5.00E-03	08/17/2006	5.1	1.		D
DUP	10028-17-8	5 62F+03	•	2 8F+02						1	22:50	20.0	3		

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAE6D1ER

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 12:16

Client Id:

**B1K2Y9** 

Matrix:

**WATER** 

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

**DUP** 

**Received Date:** 

08/01/2006

SAF	Nbr	
W06-	800	

**Contract Nbr** MW6-SBB-A19981 Case Nbr

SAS Nbr

Suffix

Decant **Distilled Volume**  File Id

FSuffix RTyp BC Н

R

Batch #/ Qc Type

DUP

Analyt/ CAS# 6215550 I-129L 15046-84-1

Result/ **Orig Rst** 2.09E-01 3.76E-02

Tot/Cnt Unit Uncert 2S pCi/L 1.4E-01 1.4E-01

**Test User** 

Qual U

Tracer MDC Yield 2.99E-01 104.3

Spk Conc/ %Rec

Analy Method 1129LL SEP L

Aliq Size/ 3.9146E+00 09/09/2006

Date/Time Analyzed

RPD/ RER/ UCL UCL 139.0 1.7

LCS LCL/UCL Typ

11:16

3 20.0

D

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

## STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%\*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\X33250.Edd

Lab Sample Id:

JAE6W1GR

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 07/26/2006 09:47

Client Id:

**B1JK54** 

Matrix: QC Type:

**WATER** DUP

**WATER** 

Sample On Date:

Received Date:

08/01/2006

SAF Nbr

**Contract Nbr** 

**Test User** 

Tot/Cnt

Uncert 2S

SAS Nbr

MDC

Suffix

Decant

**Distilled Volume** 

File Id

FSuffix RTyp BD

Н

D

R

G06-007

MW6-SBB-A19981

Unit

Qual

Case Nbr

Tracer Yield

Spk Conc/ %Rec

Analy Method Aliq Size/

Date/Time Analyzed 09/09/2006

12:22

RPD/ RER/ UCL UCL 8.0

LCS LCL/UCL Typ

Qc Type 6215555 DUP

Batch # /

SR-90 10098-97-2

Analyt/

CAS#

4.59E+03 4.99E+03

Result/

Orig Rst

pCi/L

6.9E+02 3.0E+01

1.90E+00 67.5

SRISO SEP P

5.006E-01 L

8.3 20.0

# STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAE6W1HR

Sdg/Rept Nbr: W04971

33250

Collection Date: 07/26/2006 09:47

Client Id:

B1JK54

Matrix:

WATER

**WATER** 

Sample On Date:

Moisture/Solids%\*:

QC Type:

DUP

**Received Date:** 

08/01/2006

SAF	Nbr	Contract Nbr	Т	est User	Case	Nbr SAS	S Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix	RTyp
G06-0	07 M'	W6-SBB-A19981												BE	Н
Batch # /	Analyt/	Result/		Tot/Cnt	Qu-		Tracer	Spk Conc/	Analy	Aliq	Date/Time	RPD/	RER/	LCS	R
Qc Type	CAS#	Orig Rst	Unit	Uncert 2S	al	MDC	Yield	%Rec	Method	Size/	Analyzed	UCL	UCL	LCL/U	CL Ty
6215556	BE-7	4.91E-01	pCi/L	1.6E+01	U	2.92E+01			GAMMA_GS	2.4998E+00	08/23/2006	0.0	1.3		D
DUP	13966-02-4	-1.49E+01		1.6E+01						L	09:05	20.0	3		
6215556	CO-60	-6.10E-01	pCi/L.	1.5E+00	U	2.67E+00			GAMMA_GS	2.4998E+00	08/23/2006	953.9	1.5		D
DUP	10198-40-0	9.34E-01		1.5E+00						L	09:05	20.0	3		
6215556	CS-134	-3.53E-01	pCi/L	1.5E+00	U	2.64E+00			GAMMA_GS	2.4998E+00	08/23/2006	0.0	0.5		D
DUP	13967-70-9	1.84E-01		1.5E+00						L	09:05	20.0	3		
6215556	CS-137	-5.77E-01	pCi/L.	1.5E+00	U	2.60E+00			GAMMA_GS	2.4998E+00	08/23/2006	0.0	1.1		D
DUP	10045-97-3	-1.77E+00		1.5E+00						L	09:05	20.0	3		
6215556	EU-152	1.02E+00	pCi/L	4.1E+00	U	7.47E+00			GAMMA_GS	2.4998E+00	08/23/2006	110.1	0.9		D
DUP	14683-23-9	3.53E+00		4.1E+00						L	09:05	20.0	3		
6215556	EU-154	4.61E-01	pCi/L	3.4E+00	U	6.90E+00			GAMMA_GS	2.4998E+00	08/23/2006	97.8	0.4		D
DUP	15585-10-1	1.34E+00		3.4E+00						L	09:05	20.0	3		
6215556	EU-155	1.08E-01	pCi/L	6.1E+00	U	1.03E+01			GAMMA_GS	2.4998E+00	08/23/2006	0.0	1.		D
DUP	14391-16-3	-4.19E+00		6.1E+00						L	09:05	20.0	3		
6215556	K-40	9.39E+00	pCi/L	2.2E+01	U	4.81E+01			GAMMA_GS	2.4998E+00	08/23/2006	0.0	1.4		D
DUP	13966-00-2	-1.31E+01		2.2E+01						L	09:05	20.0	3		
6215556	RU-106	4.50E+00	pCi/L	1.1E+01	U	2.20E+01			GAMMA_GS	2.4998E+00	08/23/2006	5372.0	1.1		D
DUP	13967-48-1	-4.18E+00		1.1E+01						L	09:05	20.0	3		
6215556	SB-125	-1.11E+00	pCi/L	4.0E+00	U	6.83E+00			GAMMA_GS	2.4998E+00	08/23/2006	1909.8	0.9		D
DUP	14234-35-6	3 1.37E+00		4.0E+00						L	09:05	20.0	3		

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

# STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%\*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAE6X1GR

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 07/26/2006 10:22

Client Id:

**B1JK58** 

Matrix: QC Type:

**WATER** 

**WATER** 

Sample On Date:

**Received Date:** 

08/01/2006

SAF Nbr

Contract Nbr

Case Nbr

Qu-

al

DUP

FSuffix RTyp

G06-007

MW6-SBB-A19981

SAS Nbr

Suffix

Decant

**Distilled Volume** 

File Id

BF Н

Batch # / Qc Type

Analyt/ CAS# 6215552 ALPHA 12587-46-1

Result/ Orig Rst 4.83E+00

Unit Uncert 2S pCi/L 2.4E+00

Tot/Cnt

Tracer MDC Yield 1.99E+00 100.0

Spk Conc/ %Rec

Analy Method 9310 ALPHAB

Alia Size/

Date/Time Analyzed 08/28/2006 RPD/ UCL 25.0 RER/ UCL

**LCS** LCL/UCL Typ

R

0.6 D

DUP

3.76E+00

2.2E+00

Test User

1.281E-01 L

17:49 20.0

## STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%\*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

H91MR2CW

Sdg/Rept Nbr: W04971

33250

**Collection Date:** 07/25/2006 11:20

Client Id:

B1JLK1

Matrix:

QC Type:

**WATER** 

MS

**WATER** 

Sample On Date:

**Received Date:** 

07/25/2006

SAF Nbr

**Contract Nbr** 

Case Nbr

SAS Nbr

Suffix

Decant

**Distilled Volume** 

File Id

FSuffix RTyp

W06-007

MW6-SBB-A19981

AX Н

Batch # / Qc Type 6237250

MS

Analyt/ CAS# Uranium 7440-61-1

Result/ Orig Rst 3.50E+01

Tot/Cnt Unit Uncert 2S 4.1E+00 ug/L 4.1E+00

**Test User** 

Qual MDC 8.28E-02

Spk Conc/ Tracer Yield %Rec 3.57E+01

Analy Method UTOT KPA

Aliq Size/ 2.53E-02

Analyzed 09/05/2006

Date/Time

LCS RPD/ RER/ UCL UCL

LCL/UCL Typ 60 D

R

98.0

ML

13:56

# STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%\*:

FormatType: FEAD

VersionNbr: 05

QC Type:

File Name: h:\Reportdb\edd\FeadIV\Rad\W04971.Edd, h:\Reportdb\edd\FeadIV\Rad\33250.Edd

Lab Sample Id:

JAE671DW

Sdg/Rept Nbr: W04971

33250

Collection Date: 08/01/2006 10:37

Client Id:

B1K2X7

Matrix:

**WATER** MS

**WATER** 

Sample On Date: Received Date:

08/01/2006

SAF Nbr

**Contract Nbr** 

**Test User** 

SAS Nbr

Suffix

Decant

**Distilled Volume** 

File Id

FSuffix RTyp BB

W06-008

MW6-SBB-A19981

Tot/Cnt

Qual MDC

Case Nbr

Tracer Yield

Spk Conc/ %Rec 3.61E+03

Analy Method Aliq Size/

Date/Time Analyzed 08/26/2006 RPD/ RER/ UCL UCL

LCS LCL/UCL Typ

Н

R

Batch #/ Analyt/ Qc Type CAS# TC-99 6215539 14133-76-7 MS

**Orig Rst** 3.32E+03

Result/

Unit Uncert 2S 2.5E+02 pCi/L 3.2E+01

1.01E+01 100.0

TC99 ETVDSK 1.247E-01

11:42

60 D

92.2



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

9/11/2006 4:37:40 PM

Lot No., Due Date:

QAS\_RADCALCv4.8.18

J6H010305,J6H010306,J6H010301; 09/15/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6215550; RGAMLEPS Gamma by LEPS

SDG, Matrix: W04971; WATER

	,			
<b>1.0</b> 1.1	COC Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
2.0	QC Batch	•		
2.1	Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes	No	N/A
2.2	Are the QC appropriate for the analysis included in the batch?	Yes	No	N/A
2.3	Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes	No	N/A
2.4	Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A
	QC & Samples	•		
3.1	Is the blank results, yield, and MDA within contract limits?	Yes	No	N/A
3.2	Is the LCS result, yield, and MDA within contract limits?	Yes	No	N/A
3.3	Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A
3.4	Are the duplicate result, yields, and MDAs within contract limits?	Yeş	No	N/A
3.5	Are the sample yields and MDAs within contract limits?	Yes	No	N/A
4.0	Raw Data	<b>.</b>		
4.1	Were results calculated in the correct units?	Yes	No	N/A
4.2	Were analysis volumes entered correctly?	Yes	No	N/A
4.3	Were Yields entered correctly?	Yes	No	N/A
4.4	Were spectra reviewed/meet contractual requirements?	Yes	No	N/A
4.5	Were raw counts reviewed for anomalies?	Yes	No	N/A
5 N	Other	V		
5.1	Are all nonconformances included and noted?	Yes	No	N/A
5.2	Are all required forms filled out?	Yeş	No	N/A
5.3	Was the correct methodology used?	Yes	No	N/A
5.4	Was transcription checked?	Yeş	No	N/A
5.5	Were all calculations checked at a minimum frequency?	Yeş	No	N/A
5.6	Are worksheet entries complete and correct?	Yeş	No	N/A
6.0	Comments on any No response:	W	T. Balance - Horomore	A
Fir	st Level Review			
	Richland Richard Richa			
	2. PADCAL Cv4 8 18	Page	1	



QC Batch Number:	6215550	
	10304971	

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?		1	
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?	<u> </u>		
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?	3		
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?		<u> </u>	
Comments on any "No" response:			
•		,	
		***************************************	
Second Level Review: Therryl a Colda	m	Date:	9-12-

LS-038B, Rev. 10, 8/02



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/30/2006 11:36:34 AM

Lot No., Due Date:

J6H010303; 09/15/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6215556; RGAMMA Gamma by GER

SDG. Matrix:

W04971; WATER

SDG, Matrix:	W04971; WATER			
1.0 COC 1.1 Is the ICOC page co	mplete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
2.0 QC Batch				
2.1 Do the Summary/Del	tailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes	No	N/A
2.2 Are the QC appropris	ate for the analysis included in the batch?		No	
2.3 Is the Analytical Batc	ch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes	No	N/A
2.4 Does the Worksheet	s include a Tracer Vial label for each sample?	Yes	No	N/A
3.0 QC & Samples 3.1 Is the blank results, y	yield, and MDA within contract limits?	Yes	No	N/A
3.2 Is the LCS result, yie	eld, and MDA within contract limits?	Yes	No	N/A
3.3 Are the MS/MSD res	ults, yields, and MDA within contract limits?	Yes	No	N/A
3.4 Are the duplicate res	sult, yields, and MDAs within contract limits?	Yes	No	N/A
3.5 Are the sample yields	s and MDAs within contract limits?	Yes	No	N/A
<b>4.0 Raw Data</b> 4.1 Were results calculat	ted in the correct units?	Yes	No	N/A
4.2 Were analysis volum	les entered correctly?	Yes	No	N/A
4.3 Were Yields entered	correctly?	Yes	No	N/A
4.4 Were spectra review	ed/meet contractual requirements?	Yes	No	N/A
4.5 Were raw counts rev	iewed for anomalies?	Yes	No	N/A
<b>5.0 Other</b> 5.1 Are all nonconformar	nces included and noted?	Yes	No	N/A
5.2 Are all required forms	s filled out?	Yes	No	N/A
5.3 Was the correct meth	nodology used?	Yes	No	N/A
5.4 Was transcription cho	ecked?	Yes	No	N/A
5.5 Were all calculations	checked at a minimum frequency?	Yes	No	N/A
5.6 Are worksheet entries	s complete and correct?	Yes	No	N/A
6.0 Comments on any No	o response:			
		sassannanikeessassantavalikteestakkirkeesse serkkoodistak	***************************************	***************************************
First Level Review	Pan anderson Date 8.30.08	6		
STL Richland QAS_RADCALCv4.8.18		Page	÷ 1	



OC Batch Number:	621556
OC Balen Number.	w04971

Review Item	Yes (V)	No (V)	N/A(V)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
Are the sample Minimum Detectable Activity < the Contract			•
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	+		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?	1		
5. Is the LCS recovery with contract acceptance criteria?	+	-	
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?	+		
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
14 Men transcription checked?	+	_	
5. Were all calculations checked at a minimum frequency!	-		
6. Were units checked?			

. Was the confect that		1	
. Was transcription checked?			
. Were all calculations checked at a minimum frequency?		-	
6. Were units checked?			
Comments on any "No" response:			
	,		



QAS\_RADCALCv4.8.18

## Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/30/2006 8:10:34 AM

Lot No., Due Date: J6H010299, J6H010303; 09/15/2006 Client, Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6215552; RALPHA-A Alpha by GPC-Am SDG, Matrix: W04971; WATER 8.0 Correction Calculation Protocol Used. Yeş No N/A 8.01 The Appropriate Methods Were Used To Analyze the Samples Yeş No N/A OK 8.02 Final Results Are in the Appropriate Activity Units No N/A Yeş⁄ 8.03 Batch Contains the Required QC Appropriate for the Method Yeş No N/A 8.04 The Correct Tracer and QC Vials Where Used in the Samples Yes No N/A 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample Yes No N/A 8.06 At Least the Minimum Sample Volume Was Used Yes No/ N/A Analysis Volume => JAE531AC 185.20<200.00 JAE6W1AC 99.40<200.00 JAE6X1AC 128.20<200.00 Q:VB 8.07 The Correct Count Geometry was Used. No N/A 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. No N/A Yes 8.09 Method Blank is within Control Limits No N/A OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. Yes No N/A No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). No N/A 8.13 QAS Specified Duplicate Equation Value within Control Limits. Yes No/ N/A RPD > UCL: 20.0=> JAE6X1AG ALPHA 25.0 (RPD) N/A 8.14 LCS within Control Limits. Yes No 8.15 MLCS within Control Limits. Yes No N/A No Matrix Spikes (MLCS) found in Batch! Yes No 8.16 MS within Control Limits. N/A No Matrix Spike Samples (MS) found in Batch! 8.17 Tracer within Control Limits. No N/A Yes∉ 8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No N/A Yes 8.19 Sample Specific MDC <= CRDL. No/ N/A Yes MDC/MDA > CRDL => JAE6W1AC ALPHA 3.5E+00>3.0E+00 Q:C1 8.2 Comments: 8.21 Result < Lc, Activity Not Detected, U Flag. Yes No N/A No Limit Specified! 8.22 Result < Mdc, Activity Not Detected, U Flag Yes No N/A Batch Positive Result => JAE6W1AC ALPHA 3.6E+00 L:3.5E+00 JAE6X1AC ALPHA 3.8E+00 L:2.2E+00 8.23 Result <= Action Level, when Defined. No N/A OK; No Action Level Found => ALPHA OK; No Callin Level Found => ALPHA 8.24 Result + 3s >=0, Not Too Negative. No N/A OK 10.08586 STL Richland NCM Page 1

8.25	Counting Spectrum are within FWHM Limits.	Yes	No	N/A
၀ ၇၉	No FWHM found in Batch Data! Instruments have Current Calibrations.	Yes	Na	NI/A
0.20	institutions have outrent oalibrations.	163	INO	IN/M
8.27	Correct Count Library Used.	Yes	No	N/A
	No Count Library found in Batch Data!			V
8.28	Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	n <b>Ysès</b>	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	∨ <b>Yéess</b> io	n <b>Neò</b> .	N/A
8.3	Comments:			
8.31	Results Blank Subtracted as Appropriate. OK	Yes	No	N/A
0.000.0000.400		ooneen Tomorioso	**************	
		-An		
Firs	t Level Review Pam anderson Date 8.3006		-	
STL F	Richland	Page	2	

QAS\_RADCALCv4.8.18



OC Batch Number:	1,215552
OC Battle Humber.	W04971

Review Item	Yes (V)	No (1)	N/A (V)
A Sample Analysis			
· · · · · · · · · · · · · · · · · · ·			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?	·		
3. Are the correct isotopes reported?			
P. OC Camples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?	1//		
2. Does the blank result meet the Contract criteria?	<del>                                     </del>		
2. It the blank result < the Contract Detection Limit?			
4 Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?	+		
Letter I Co recovery with contract acceptance criteria!	+	<del>                                     </del>	
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
T::+?			
8. Do the MS/MSD results and yields meet acceptance criteria?		-	
9. Do the duplicate sample results and yields meet acceptance		1	
criteria?			
C. Other			
1 Are all Nonconformances included and noted?	+		
2 Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?	<del></del>		
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			

. Are all required forms filled out?	1			
. Was the correct methodology used?	<del>                                     </del>			
Was transcription checked?				
. Were all calculations checked at a minimum frequency?	+/			
. Were units checked?				
Comments on any "No" response: See A Com				
	,			
				•
		Dataid	1-10-0	

# Clouseau Nonconformance Memo



NCM #: 10-08586

NCM Initiated By: Pam Anderson Date Opened: 08/30/2006

Date Closed:

Classification: Anomaly

Status: **PMREVIEW** 

Production Area: Environmental - Sep

Tests: Alpha by GPC-Am

Lot #'s (Sample #'s): J6H010303 (1),

QC Batches: 6215552

Nonconformance: MDA not met Subcategory: Matrix effect

#### Problem Description / Root Cause

Name <u>Date</u> <u>Description</u>

Pam Anderson 08/30/2006 Sample JAE6W1AC for alpha does not meet CRDL. A smaller aliquot was taken

when the activity screen indicated a warm sample. This helps to stop contamination

in the lab.

Corrective Action

NameDateCorrective ActionPam Anderson08/30/2006Note in case narrative.

**Client Notification Summary** 

Client Project Manager Notified Response How Notified Note

Response Note

**Quality Assurance Verification** 

Verified By Due Date Status Notes

This section not yet completed by QA.

Approval History

Date Approved By Position

Date Printed: 8/30/2006 Page 1 of 1



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/28/2006 9:04:33 AM

Lot No., Due Date:

J6H010299,J6H010303; 09/15/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6215554; RBETA-SR Beta by GPC-Sr/Y

SDG, Matrix: W04971; WATER

SDG, Watrix:	WU4971; WATER			
8.0 Correction Calculation Proto	ocol Used.	Yes	No	N/A
8.01 The Appropriate Methods	Were Used To Analyze the Samples	Yes	No	N/A
OK 8.02 Final Results Are in the Ap	propriate Activity Units	Yes	No	N/A
OK 8.03 Batch Contains the Requir	ed QC Appropriate for the Method	Yea	No	N/A
OK 8.04 The Correct Tracer and Q0	C Vials Where Used in the Samples	Yeş	No	N/A
OK 8.05 Sample was Appropriately	Traced Before or After Fractionating the Sample	Yeş	No	N/A
OK 8.06 At Least the Minimum San		Yes	No/	N/A
Analysis Volume => JAE6W1/	·	. 00	V	,
8.07 The Correct Count Geome		Yes	No	N/A
<del></del>	for the Minimum Count Time or CRDL was Achieved.	Yes	No	N/A
8.09 Method Blank is within Cor	ntrol Limits.	Yes	No	N/A
OK 8.1 Comments:		<u>Q.J.</u>		
8.11 Matrix Blank is within Cont		Yes	No	N/A
, ,	mit Value (No B Flag Necessary).	Yes	No	N/A
	quation Value within Control Limits.	Yes	No	N/A
OK (RPD) 8.14 LCS within Control Limits.		Yeş	No	N/A
OK 8.15 MLCS within Control Limits	5.	Yes	No	N/A
No Matrix Spikes (MLCS) foun 8.16 MS within Control Limits.		Yes		W
No Matrix Spike Samples (MS)	found in Batch!			V
8.17 Tracer within Control Limit		Yes	No	N/A
	um Tracer Yield (No Failed Samples)	Yes	No	N/A
8.19 Sample Specific MDC <= 0	CRDL.	Yes	No	N/A
MDC/MDA > CRDL => JAE6W 8.2 Comments:	/1AD BETA 7.8E+00>4.0E+00 Q:C1		<u> </u>	******************
8.21 Result < Lc, Activity Not De	etected U Flag	Yes	No	N/Æ
No Limit Specified!  8.22 Result < Mdc, Activity Not	_		No/	W
Batch Positive Result => JAE531AD BETA 3.9E+01 L:2 JAE6W1AD BETA 8.7E+03 L	.6E+00	163	Ÿ.	IV/A
JAE6X1AD BETA 2.0E+03 L			NI -	NI/A
8.23 Result <= Action Level, wh OK; No Action Level Found =:		Yes	IVO	N/A
OK; No Callin Level Found =		Voa	Na	N/A
8.24 Result + 3s >=0, Not Too OK	inegative.	Yes	INO	IV/A
CTI. Diabland				
STL Richland QAS_RADCALCv4.8.18		Page	1	

8.25	Counting Spectrum are within FWHM Limits.  No FWHM found in Batch Data!	Yes	No	N/A
8.26	Instruments have Current Calibrations.	Yes	No	N/A
8.27	Correct Count Library Used.	Yes	No	N/A
8.28	No Count Library found in Batch Data! Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version.)	n <b>Yéès</b>	No	₩ N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	V <b>es</b> ic	n <b>ikisò</b> .	N/A
8.3	Comments:			
	Results Blank Subtracted as Appropriate.	Yeş	Nο	N/A
	OK	V		
	t Level Review Pan Qualerson Date 8 38.06			
ı	t Level Review Yam Underson Date 8 38.06		-	
	_RADCALCv4.8.18	Page	2	



OC Batch Number:	6215554
OC Baien Number.	W04971

Review Item	Yes (V)	No (1)	N/A(V)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples  B. QC Samples			1
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>			
Contract Detection Limit?			
Does the blank result meet the Contract criteria?     Does the blank result meet the Contract criteria?			
<ul> <li>3. Is the blank result &lt; the Contract Detection Limit?</li> <li>4. Is the blank result &gt; the Contract Detection Limit but the sample</li> </ul>			
4. Is the blank result > the Contract Detection Emiliary			
result < the Contract Detection Limit?			
<ul> <li>5. Is the LCS recovery with contract acceptance criteria?</li> <li>7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection</li> </ul>			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?	+		
3. Was the correct methodology used?	+-/		
We transcription checked?	+		
5. Were all calculations checked at a minimum frequency?	+		
6. Were units checked?			

Comments on any "No" response:	•
Total Control of the	·

Second Level Review Sherry a Clam:

\_\_\_\_\_ Date: \$ - 28 - 06



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

9/11/2006 4:04:50 PM

Lot No., Due Date:

J6H010303; 09/15/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6215555; RSR85907 Sr-85/90 by GPC-7

SDG, Matrix:

W04971; WATER

.0 COC .1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
.0 QC Batch .1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes	No	N/A
.2 Are the QC appropriate for the analysis included in the batch?	Yes	No	N/A
.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes	No	N/A
.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A
.0 QC & Samples .1 Is the blank results, yield, and MDA within contract limits?	Yes	No	N/A
.2 Is the LCS result, yield, and MDA within contract limits?	Yes	No	N/A
.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/
.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes	No	N/
.5 Are the sample yields and MDAs within contract limits?	Yes	No	N/
.0 Raw Data .1 Were results calculated in the correct units?	Yes	No	N/
.2 Were analysis volumes entered correctly?	Yeş	No	N/
.3 Were Yields entered correctly?	Yes	No	N/
.4 Were spectra reviewed/meet contractual requirements?	Yeş	No	N/
.5 Were raw counts reviewed for anomalies?	Yes	No	N/
.0 Other .1 Are all nonconformances included and noted?	Yeş	No	N/
.2 Are all required forms filled out?	Yes	No	N/
.3 Was the correct methodology used?	Yes	No	N/
.4 Was transcription checked?	Yeş	No	N/
.5 Were all calculations checked at a minimum frequency?	Yes	No	N/
.6 Are worksheet entries complete and correct?	Yes	No	N/
.0 Comments on any No response: Elevated MDA due to reduced aliquants (screening)	and and the second seco	occurrency or responsible of the control of the con	ACCHIO/CONTROCO MA
First Level Review Sun E Mucland Date MINDS			
TL Richland AS_RADCALCv4.8.18	Page	- : 1	MANAGER



QC Batch Number:	4215555
	4004971

Review Item	Yes (√)	No (\(\forall \)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples		İ	
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>		]	
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			A PARTIE AND A PAR
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection		***************************************	
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			Personal
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			
Comments on any "No" response: Set KCM	,		THE THE PARTY CONTRACTOR BASES AND AND ADDRESS OF THE PARTY OF THE PAR

. was the correct methodology used?			ł	
. Was transcription checked?				
. Were all calculations checked at a minimum frequency?				
. Were units checked?				
Comments on any "No" response: Set MCM				
	-			
·				
•				
	-			
Second Level Review Sherryl a Alan		Date: 9	12-06	

# Clouseau Nonconformance Memo



NCM #: 10-08656

NCM Initiated By: Steven Wheland Date Opened: 09/11/2006

Date Closed:

Classification: Anomaly

Status: GLREVIEW

Production Area: Environmental - Prep

Tests: Sr-85/90 by GPC-7

Lot #'s (Sample #'s): J6H010303 (1),

QC Batches: 6215555

Nonconformance: MDA not met Subcategory: Data accepted

#### Problem Description / Root Cause

Name

<u>Date</u>

Description

Steven Wheland 09/11/

09/11/2006 MDA elevated due to reduced aliquant.

#### **Corrective Action**

<u>Name</u>

<u>Date</u>

Corrective Action

Steven Wheland

09/11/2006 report data

#### **Client Notification Summary**

Client

**Project Manager** 

**Notified** 

Response How Notified

Note

Response

**Response Note** 

#### **Quality Assurance Verification**

Verified By

**Due Date** 

**Status** 

Notes

This section not yet completed by QA.

#### Approval History

**Date Approved** 

Approved By

**Position** 

Date Printed: 9/11/2006

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# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/30/2006 7:45:41 AM

Lot No., Due Date:

J6H010301,J6H010297,J6H010305,J6H010307; 09/15/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6215539; RTC99 Tc-99 by LSC

SDG, Matrix: W04971; WATER

SDG, Matrix:	W04971; WATER			
8.0 Correction Calculation Pr	rotocol Used.	Yea	No	N/A
8.01 The Appropriate Method	ds Were Used To Analyze the Samples	Yeş	No	N/A
OK 8.02 Final Results Are in the	Appropriate Activity Units	Yeş	No	N/A
OK	wired OC Appropriate for the Method	Voc	Nο	N/A
OK	quired QC Appropriate for the Method	$\mathbf{A}$		
	QC Vials Where Used in the Samples E671AD TCSG<>TCSE Q:V9	Yes	No	N/A
	ely Traced Before or After Fractionating the Sample	Yes	No	N/A
OK 8.06 At Least the Minimum S	Sample Volume Was Used	Yeş	No	N/A
ОК		V		
8.07 The Correct Count Geor	metry was Used.	Yes	NO	N/A
8.08 The Sample was Count	ed for the Minimum Count Time or CRDL was Achieved.	Yes	No	N/A
8.09 Method Blank is within 0	Control Limits.	Yes	No	N/A
OK 8.1 Comments:		<u>(V)</u>		
8.11 Matrix Blank is within Co	ontrol Limito	Yes	Na	NI/A
No Matrix Blanks (MBlks) fo		165	INO	V
8.12 Method Blank(s) < QAS OK	Limit Value (No B Flag Necessary).	Yes	No	N/A
8.13 QAS Specified Duplicate	e Equation Value within Control Limits.	Yes	No	N/A
OK (RPD) 8.14 LCS within Control Limit	15.	Yea	No	N/A
ОК		V		
8.15 MLCS within Control Lin No Matrix Spikes (MLCS) for		Yes	No	N/P
8.16 MS within Control Limits OK		Yes	No	N/A
8.17 Tracer within Control Lir		Yes	No	N/A
No Tracers found in Batch! 8 18 Samples are above Min	imum Tracer Yield (No Failed Samples)	Yes	No	₩ N/A
No Tracers found in Batch!				W
8.19 Sample Specific MDC <	≃ CRDL.	Yes	No	N/A
8.2 Comments:			erencius de la transita	
8.21 Result < Lc, Activity Not	t Detected, U Flag.	Yes	No	N/A
No Limit Specified! 8.22 Result < Mdc, Activity N	lot Detected. U Flag.	Yes	No	N/A
No Positive Results	•			
OK Calc_IDL Not Calculat 8.23 Result <= Action Level,		Yeş	No	N/A
OK; No Action Level Found				
OK; No Callin Level Foun		Vae	Nο	N/A
8.24 Result + 3s >=0, Not To		<u> </u>		
8.25 Counting Spectrum are No FWHM found in Batch D		Yes	No	N/A
STL Richland  QAS_RADCALCv4.8.18		Page	e 1	

8.26	Instruments have Current Calibrations.	Yes	No	N/A
8.27	Correct Count Library Used.	Yes	No	N/A
8.28	No Count Library found in Batch Data!  Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version.)	n <b>Yéès</b>	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	v <b>Yéess</b> io	or <b>îNbò</b> .	N/A
8.3 (	Comments:	***************************************	econolinidanos (2014)	DOMESTIC AND CONTROL OF
8.31	Results Blank Subtracted as Appropriate.	Yeş	No	N/A
.,		<b>Y</b>	·····	
٠				
First	t Level Review Pams anderson Date 8:30:00		_	
) I L F	Richland	Page	2	

QAS\_RADCALCv4.8.18



OC Batch Number: 6 115539

Review Item	Yes (V)	No (V)	N/A(V)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	<u> </u>		
2. Is the sample Minimum Detectable Activity < the Contract			•
Detection Limit?	1		
3. Are the correct isotopes reported?	+		
B. QC Samples			
<ol> <li>Is the Minimum Detectable Activity for the blank result ≤ the</li> </ol>			
Contract Detection Limit?	1		
2. Does the blank result meet the Contract criteria?	+-/-		
3. Is the blank result < the Contract Detection Limit?	+		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?	+/		
5. Is the LCS recovery with contract acceptance criteria?	+		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
? Are all required forms filled out?	1		
3. Was the correct methodology used?	1-/		
A Was transcription checked?	1		
5. Were all calculations checked at a minimum frequency?	1	_	-
6. Were units checked?			

, well man object.	
Comments on any "No" response:	

Second Level Review Therry Calle

Date: \$ 30-06



STL Richland

QAS\_RADCALCv4.8.18

# Data Review/Verification Checklist

8/21/2006 1:36:25 PM

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RADIOCHEMISTRY, First Level Review J6H010299,J6H010301,J6H010297,J6H010305,J6H010307,J6H010303; 09/15/2006 Lot No., Due Date: Client, Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6215544; RTRITIUM H-3 by LSC SDG, Matrix: W04971; WATER 8.0 Correction Calculation Protocol Used. No N/A Yeş No N/A 8.01 The Appropriate Methods Were Used To Analyze the Samples 8.02 Final Results Are in the Appropriate Activity Units No N/A Yes Yes No N/A 8.03 Batch Contains the Required QC Appropriate for the Method 8.04 The Correct Tracer and QC Vials Where Used in the Samples Yeş No N/A 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample No N/A Yes Yes No N/A 8.06 At Least the Minimum Sample Volume Was Used Analysis Volume => JAE5J1AA 5.00<10.00 OK PA 8-2100 JAE531AA 5.00<10.00 JAE591AA 5.00<10.00 JAE6C1AA 5.00<10.00 JAE6D1AA 5.00<10.00 JAE6K1AA 5.00<10.00 JAE6R1AE 5.00<10.00 JAE6T1AA 5.00<10.00 JAE6W1AA 5.00<10.00 JAE6X1AA 5.00<10.00 JAE611AA 5.00<10.00 JAE671AA 5.00<10.00 JAGEM1AA 5.00<10.00 Q:VB 8.07 The Correct Count Geometry was Used. Count Geometry => JAK2V1AF SVP15/5<>SVP10/10 06 PA-8-26-06 JAK2V1AG SVP15/5<>SVP10/10 JAK2V1AH SVP15/5<>SVP10/10 JAK2V1AA SVP15/5<>SVP10/10 JAK2V1AC SVP15/5<>SVP10/10 JAE5J1AA SVP15/5<>SVP10/10 JAE531AA SVP15/5<>SVP10/10 JAE591AA SVP15/5<>SVP10/10 JAE6C1AA SVP15/5<>SVP10/10 JAE6D1AA SVP15/5<>SVP10/10 JAE6K1AA SVP15/5<>SVP10/10 JAE6R1AE SVP15/5<>SVP10/10 JAE6T1AA SVP15/5<>SVP10/10 JAK2V1AD SVP15/5<>SVP10/10 JAK2V1AE SVP15/5<>SVP10/10 JAE6W1AA SVP15/5<>SVP10/10 JAE6X1AA SVP15/5<>SVP10/10 JAE611AA SVP15/5<>SVP10/10 JAE611AE SVP15/5<>SVP10/10 JAE671AA SVP15/5<>SVP10/10 JAGEM1AA SVP15/5<>SVP10/10 Q:VC No N/A 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. No N/A 8.09 Method Blank is within Control Limits. OK 8.1 Comments: No N/A 8.11 Matrix Blank is within Control Limits. No N/A Yes 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). 8.13 QAS Specified Duplicate Equation Value within Control Limits. No N/A Yes OK (RPD) Yeş No N/A 8.14 LCS within Control Limits. OK

1	S within Control Limits.	Yeş	No	N/A
OK 8.16 MS w	vithin Control Limits.	Yes	No	N/A
	atrix Spike Samples (MS) found in Batch! er within Control Limits.	Yes	Nο	N/A
No Tra	acers found in Batch!			W
	ples are above Minimum Tracer Yield (No Failed Samples) acers found in Batch!	Yes	No	N/A
The same of the sa		Yeş	No	N/A
OK 8.2 Comm	Dants:	Y.	www.awwareeeste	
	ılt < Lc, Activity Not Detected, U Flag. nit Specified!	Yes	No	N/A
8.22 Resu	ılt < Mdc, Activity Not Detected, U Flag.	Yeş	No	N/A
	sitive Results Calc_IDL Not Calculated	<b>Y</b>		
8.23 Resu	ılt <= Action Level, when Defined.	Yeş	No	N/A
	lo Action Level Found => H-3	(Say)		
	No Callin Level Found => H-3  Ilt + 3s >=0, Not Too Negative.	Yeş	No	N/A
OK		V.	81-	NI/A/
	nting Spectrum are within FWHM Limits.  VHM found in Batch Data!	res	NO	N/A
		Yes	No	N/A
8.27 Corre	ect Count Library Used.	Yes	No	N/A
No Co	unt Library found in Batch Data!	WAG	No	N/A
	ument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version			
8.29 Instru	ument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later $ec{v}$	<b>Yeesi</b> o	n <b>Nbò</b> .	N/A
	• • • • • • • • • • • • • • • • • • • •			1
8.3 Comm				
8.3 Comm	nents:	Yeş	No	N/A
8.3 Comm	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.3 Comm 8.31 Resu	nents:	Yes	No	N/A
8.31 Resu OK	nents:	Yes	No	N/A

STL Richland

QAS\_RADCALCv4.8.18

Page 2



OC Batch Number:	621554H wo4971

	Yes (V)	No (V)	N/A (V)
Review Item	200 (1)		
A. Sample Analysis			
A. Sample Analysis     Are the sample yields within acceptance criteria?     Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?	-		
3. Are the correct isotopes reported?	-		
B. QC Samples  1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?  2. Does the blank result meet the Contract criteria?  2. Does the blank result meet the Contract criteria?		art -	
3. Is the blank result < the Contract Detection Limit but the sample  4. Is the blank result > the Contract Detection Limit but the sample			
1 C to at Detection Lilling	+		
<ul> <li>result &lt; the Contract Detected B</li> <li>5. Is the LCS recovery with contract acceptance criteria?</li> <li>7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection</li> </ul>			
8. Do the MS/MSD results and yields meet acceptance criteria?  9. Do the duplicate sample results and yields meet acceptance			
9. Do the duplicate sample results			
criteria? C. Other			
Are all Nonconformances included and noted:	+		
2. Are all required forms filled out?	+		
3 Was the correct methodology used?	+		
- hadred/	1		
5. Were all calculations checked at a minimum nequency.	+ /		
6. Were units checked?			

. Were all calculations checked at a manual		 	
Were units checked?			
Comments on any "No" response:			
	•		*

Second Level Review Merry a Relan Date: 5-21-06



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

9/6/2006 5:07:33 PM

Lot No., Due Date:

J6G260132,J6G310193,J6H010306; 09/15/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6237250; RUNAT UNat by KPA

SDG, Matrix: W04971; WATER

SDG, Matrix: W04971; WATER	
8.0 Correction Calculation Protocol Used. OK	Yes No N/A
8.01 The Appropriate Methods Were Used To Analyze the Samples OK	Yes No N/A
8.02 Final Results Are in the Appropriate Activity Units OK	Yes No N/A
8.03 Batch Contains the Required QC Appropriate for the Method OK	Yes No N/A
8.04 The Correct Tracer and QC Vials Where Used in the Samples Incorrect Tracer/Vial => JAK3H2AD UNSC<>UNSF Q:V9	Yes No N/A
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample OK	Yes No N/A
8.06 At Least the Minimum Sample Volume Was Used  No Count Analysis Size found in Batch Data!	Yes No N/A
8.07 The Correct Count Geometry was Used.  No Count Geometry found in Batch Data!	Yes No N/A
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved.  No Count Duration Field Found in Batch Data!	Yes No N/A
8.09 Method Blank is within Control Limits.  OK	Yes No N/A
8.1 Comments:	
8.11 Matrix Blank is within Control Limits.  No Matrix Blanks (MBlks) found in Batch!	Yes No N/A
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary).  OK	Yes No N/A
8.13 QAS Specified Duplicate Equation Value within Control Limits.  OK (RPD)	Yes No N/A
8.14 LCS within Control Limits. OK	Yes No N/A
8.15 MLCS within Control Limits.  No Matrix Spikes (MLCS) found in Batch!	Yes No N/A
8.16 MS within Control Limits.  OK	Yes No N/A
8.17 Tracer within Control Limits.  No Tracers found in Batch!	Yes No N/A
8.18 Samples are above Minimum Tracer Yield (No Failed Samples)  No Tracers found in Batch!	Yes No N/A
8.19 Sample Specific MDC <= CRDL.  OK	Yes No N/A
8.2 Comments:	
8.21 Result < Lc, Activity Not Detected, U Flag.  No Limit Specified!	Yes No N/A
8.22 Result < Mdc, Activity Not Detected, U Flag.  Batch Positive Result => H91MC2AA Uranium 5.5E+00 L:8.4E-02 JAC4R2AA Uranium 4.1E+01 L:8.5E-02 JAC4T2AA Uranium 5.1E+00 L:8.3E-02 JAE652AC Uranium 1.5E+00 L:8.3E-02 JAE662AC Uranium 9.1E-01 L:8.3E-02	Yes No N/A
8.23 Result <= Action Level, when Defined. OK; No Action Level Found => Uranium	Yes No N/A
OK; No Callin Level Found => Uranium  8.24 Result + 3s >= 0, Not Too Negative. OK  OK  OK  OK  OK	Yes No N/A
OK NCM 10-08626 STL Richland	
QAS_RADCALCv4.8.18	Page 1

8.25		Yes	No	N/A
8.26	No FWHM found in Batch Data! Instruments have Current Calibrations.	Yes	No	N/A
8.27	Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A
8.28	Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	ntées	No	N/A
	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later			
	Comments:	***************************************		
8.31	Results Blank Subtracted as Appropriate. OK	Yes	No	N/A
			999,000	
	t Level Review Pam Anderson Date 9.7.04			
STL F	Richland	Page	2	

QAS\_RADCALCv4.8.18



Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples	PHILIP CO. 10 CO		
1. Is the Minimum Detectable Activity for the blank result $\leq$ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance  9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			<del>-  </del>
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?	<del>                                     </del>		
3. Was the correct methodology used?			
4. Was transcription checked?			***************************************
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			
Comments on any "No" response: See MCM	**		

Therry a alam: Date: 9-7-06

# Clouseau Nonconformance Memo



NCM #: 10-08629

NCM Initiated By: Pam Anderson Date Opened: 09/07/2006

Date Closed:

Classification: Anomaly

Status: GLREVIEW

Production Area: Environmental - Sep

Tests: UNat by KPA

Lot #'s (Sample #'s): J6G260132 (1,2), J6G310193

(1,2), J6H010306 (1,2),

J6H030000 (548), QC Batches: 6237250

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

#### **Problem Description / Root Cause**

Name <u>Date</u> <u>Description</u>

Pam Anderson 09/07/2006 The blank was just at CRDL for this total uranium batch. There were some high

samples in the batch. The batch was reanalyzed with good results.

**Corrective Action** 

NameDateCorrective ActionPam Anderson09/07/2006The batch wa reanalyzed.

Client Notification Summary

Client Project Manager Notified Response How Notified Note

Response Response Note

Quality Assurance Verification

Verified By Due Date Status Notes

This section not yet completed by QA.

Approval History

Date Approved Approved By Position

Date Printed: 9/7/2006 Page 1 of 1

PNNL	J66260132 W04971
	7

# CHAIN OF CUSTODY/SAMPLE ANALYSIS DEOLIEST

C.C	).C.	#								
		1	V	06	<b>)</b> -(	00	7	-1	44	L

**	vv-	-UU /	/-l-	
Page	1	of	1	
FA	X			

	$\omega_{0}$	7.7	/		CILAI	HOL	COSTONIA	SAMILLE ANAL	I SIS NEQUESI	L			
	D	ul	. 9.	8.06							Page	<u>1</u> of <u>1</u>	
	MALL.					Contact/Re Dot Stew			<b>Telephone No.</b> 509-376-5056				
SAF No.			· · · · · · · · · · · · · · · · · · ·			Sampling (	Origin			Purchase Order/Charge Code			
W06-007 Project Title				***************************************	······································	Hanford	5-8HW5-	HINL	Ice Chest No.	Ice Chest No. SML 442 Temp.			
RCRA, JULY 2 Shipped To (Lab)						Method of		(1/07	Bill of Lading/Air				
Severn Trent Inc Protocol		hland	ONE CONTRACTOR OF THE PROPERTY		*************	Govt. Ve	hicle			Offsite Property No.			
RCRA							Pric	ority: 45 Days		· · · · · · · · · · · · · · · · · · ·			
POSSIBLE SAMI ** **	PLE HAZAKI	)S/KE	LMARKS			-		SPECIAL INSTRUCTIONS Batch all PNNL GW samples sul 14 days. Submit invoices & deliverables to	omitted under "W", "S", "I", "A" or "G	l otal Acti " 06 SAFs into or	vity Exemption is SDG, not to ex	n: Yes V No Laceed SDG closure of	
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample .	Analysis		P	reservative	
B1JLJ8		W	7-25-06	1001	1x20-mL	Р	Activity Scan					None	
B1JLJ8		W		6	1x500-mL	. G/P	UTOT_KPA: Uraniui	n (1)	H91mc			HNO3 to pH <2	
									2000 AND				
					1				s'				
Relinquished By Relinquished By	Print				Date/	5 2000	Received By Received By	h - Welch	JUL 2 5 20 Date/Time	SE =	Mati	DS = Drum Solid DL = Drum Liqui	
Relinquished By					Date/	Time	Received By		Date/Time	W =	Solid Sludge Water Oil Air	T = Tissue WI = Wine I. = Liquid V = Vegetation X = Other	
Relinquished By	- /x			save, quality like	Date/	Time	Received By		Date/Time				
FINAL SAMPI DISPOSITION	1 .	Method	d (e.g., Return to	customer, per	lab procedure	e, used in proc	ess)	Disposed By			Date/Tim	e	

PNNL 166260132	
W04971	
Dun 9-80	2

C.O.C.#

W06-007-150

	W049	17/	-		CHAI	NOP	COSTONAL	SAMPLE	ANALYSIS	KEQU.	LOI	L	,,,		100
	WO49 Due	9-	8.06										Page	<u>1</u> of <u>1</u>	
Collector						Contact/Re Dot Stew		Telephone 509-37		MSIN	FAX	ζ			
SAF No. W06-007						Sampling O Hanford S	Origin Pu				Purchase Order/Charge Code				
Project Title							S-SHWS-HR	V-L		Ice Chest	No:SML-	447-	Temp.		
RCRA, JULY 200 Shinned To (Lab)		.nchemica propositione	zialzenianienijakojakojakojakojakojakojak			Method of	Shipment			Bill of La	Ill of Lading/Air Bill No.				
Severn Trent Inco Protocol	ornorated. Ric	hland				Govt. Vel					Offsite Property No.				
RCRA POSSIBLE SAMPI	LE HAZARI	)S/RE	MARKS			<u> </u>	FIIC	ority: 45 Days SPECIAL INS	TRUCTIONS H	 old Time		Total Acti	vity Exemption	r: Yes	No
** **								Batch all PNNL 14 days.	GW samples submitted under & deliverables to DL Stewar	er "W", "S", "I",	"A" or "G" 06	SAFs into or	ne SDG, not to ex	ceed SDG clos	sure of
Sample No.	Lab ID	*	Date	Time	No/Type	Container			Sample Analysis				P	reservative	
B1JLK1		W	77506	MIGO	1x20-mL	Р	Activity Scan							None	
B1JLK1		W	V	7	1x500-mL	. G/P	UTOT_KPA: Uraniui	m (1)	HS.	TIMR				HNO3 to	pH <2
													•		
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***															
											***************************************				
		$\vdash$													
			<u> </u>												
			<del>                                     </del>		<del>                                     </del>										
		<u></u>	<u> </u>		1		L				·····				
Relinquished By	Print		Sign		Date/Date/	Time 1447	Received by - We	Print (	- Welch	Date of the state	e/Time   44 5 2006	7 s =	Matr	rix *	rım Solid
Relinquished			C 05	<del></del>	Date/	Time	Received By				e/Time	SF. = SO = SL =	Sediment Solid Sludge Water	$DI. = D$ $T = T_1$ $WI = W$ $I. = I_2$	issue /ine
Relinquished By	<u> </u>				Date/	Time	Received By	, , , , , , , , , , , , , , , , , , , ,		Dat	e/Time	0 =	Oil Air		egetation
Relinquished By		***************************************	<u></u>		Date/	Time	Received By			Dat	e/Time				
FINAL SAMPLE DISPOSITION		Method	l (e.g., Return to	customer, per	lab procedure	e, used in proce	ess)		Disposed By				Date/Tim	e	



# Sample Check-in List

D	ate/Time Received: 7-25 06 14	PUT
W	ork Order Number: 166-360132	00497/ NA[] SAF#: W06-067 NA[]
Sh	Ipping Container ID: 5ML 442	or Custody # 406-007-150 144
1.	Custody Seals on shipping container in	Air Bill # N/A
2,	Custody Seals dated and signed?	NA[] Yes[] No[]
3.	Chain of Custody record present?	NA[] Yeaff No[]
4.	Cooler temperature: NA[]	Yes [] No []
6.	Number of samples in shipping containe	Yes [] No [] 5: Vermiculite/packing materials is NA[] Wet [] Dry []
7.	Sample holding times exceeded?	
8,	Samples have:tape	NA[] Yes[] No[]
	custody seals	hazard labels
9,	Samples are:in good condition	appropriate samples labels
	broken	leaking
10.	Sample will 4 1	(Only for samples requiring head space)
	Sample pH taken? NA[] pH<2	t J pii 2 [ ] adimeted
11.	Sample Location, Sample Collector Listed *For documentation only.	17 *
12.	*For documentation only. No corrective as	action needed. Yes[] No[]
13.	Were any anomalies identified in sample re Description of anomalies (include sample n	
-		numbers): MA
<del></del>		
Sample	Custodian: D. Wellh	Date: 7-25.06 14:47
Çli	ent Sample ID Analysis Requested	Condition 6
		Comments/Action
<u> </u>		
!	formed onby	Person contacted
[] No ac	ction necessary; process as is,	
Project M:	anager	Date
LS-023, 12	2/05, Rey. 6	

		10	2			\			C.O.C.#			
PNNL JG	6310	193	2,		CHAIN OF	CUSTÔDY/S	SAMPLE ANALYS	IS REOUEST	W	<b>706-007-120</b>		
		14'	"	ue 9.	14.06				Page	<u>1</u> of <u>1</u>		
Qs.	<del>X/P/(156K</del> D. R. 575 <b>9</b> 249	WENO		<u> </u>		AX						
SAF No.					Dot Stev Sampling	Origin		509-376-5056 Purchase Order/Charge (	Code			
W06-007 Project Title			***************************************		Hanford		5-SAWS-4104	Ice Chest No. SML-	1/4/2 Temp.			
RCRA, JULY 20 Shinned To (Lab)	006				Method of		J 011003 17107	Bill of Lading/Air Bill No				
Severn Trent Inc	cornorated. Ric	hland	na cofe contraction was an arrandomic to	altra en la companya de la companya	Govt. Ve			Offsite Property No.				
RCRA					]	Prio	rity: 45 Days					
POSSIBLE SAMF ** **	PLE HAZARD	)S/RE	MARKS				SPECIAL INSTRUCTIONS Batch all PNNL GW samples submitted 14 days. Submit invoices & deliverables to DL S	d under "W", "S", "I", "A" or "G" 06 SA	otal Activity Exemp Fs into one SDG, not to			
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analy	vsis		Preservative		
B1JLH6		W	7/31/06	120(	1x20-mL P	Activity Scan				None		
B1JLH6		W	V		1x500-mL G/P	UTOT_KPA: Uraniun	n (1 <u>)</u>	JAC4R		HNO3 to pH <2		
			•									
		<u> </u>		h 100	all							
		_		K. W	1/21/06							
			V		112"				with the state of			
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		ļ										
				<u></u>					,			
Relinquished By	A . Brint	1	Sign/		Date/Time 40	Received By	Print Sign	Date/Time 40 \$		latrix *		
DURATEK	OKT	HU	with	's 11	111 3 1 2006	d/11/11	h S. Welch	1111 2 1 2006	S = Soil	DS = Drum Solid		
Relinquished By	11477 1000				Date/Time	Received By	*	Date/Time	SE = Sediment SO = Solid SL = Sludge	DL = Drum Liani T = Tissue WI = Wine		
Relinquished By	***************************************				Date/Time	Received By		Date/Time	W = Water O = Oil A = Air	L = Liquid V = Vegetation X = Other		
Relinquished By		***************************************			Date/Time	Received By	AND THE RESERVE OF THE PARTY OF	Date/Time		· · · · · · · · · · · · · · · · · · ·		
FINAL SAMPL DISPOSITION		Method	l (e.g., Return to	customer, per	lab procedure, used in proc	cess)	Disposed By		Date/7	Time		

-

PNNL J4	6-3/0/ W04 duratek d. r. srs/	193	3 7/ Du	e 9:14		OF (	CUSTODY/S	SAMPLE ANAI	LYSIS R	REQUEST	C.	O.C.# <b>W0</b> Page 1	6-007-126	
Collector	D. R. 575%	NCX.	31/-		Cont	tact/Red				<b>Telephone No.</b> 509-376-5056	MSIN	FAX		
SAF No.					Sami	pling O	rigin	<u> </u>		Purchase Order/Char	ge Code			
W06-007 Project Title		·····				anford S		c case II	121	Ice Chest No. SML-442 Temp.				
RCRA, JULY 20 Shinned To (Lab)	06						OK, DL. Shipment	S-SAWS-H	<u> </u>	Bill of Lading/Air Bill	<del></del>			
Severn Trent Inco	ornorated. Ric	hland				ovt. Vel								
Protocol RCRA							Prio	rity: 45 Days		Offsite Property No.				
POSSIBLE SAMP ** **	LE HAZARD	S/RE	MARKS					SPECIAL INSTRUCTION Batch all PNNL GW samples s 14 days. Submit invoices & deliverables	submitted under "		Total Activi 5 SAFs into one	v Exemption: SDG, not to exce	: Yes V No eed SDG closure of	
Sample No.	Lab ID	*	Date	Time	No/Type Cont	tainer		Sample	e Analysis			Pre	eservative	
B1JLH9		w	7/31/06	1329	1x20-mL P		Activity Scan		movito/constit				None	
B1JLH9		w	72,700	1/	1x500-mL G/P		UTOT_KPA: Uranium	1 (1)	JAC	4T			HNO3 to pH <2	
~			<u>\</u>	V					,,,	7 8				
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	<u> </u>				h 00-									
			$\mathcal{L}$							-				
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		2								ir c				
Relinquished By Relinquished By	). K-/Du	un	Sign	Cam 4 5	Date/Time	<del>40</del> 5	Received By Received By	Print Sig S. Welch	,	Date/Time  Date/Time	S = S SE = S SO = S SL = S	Matri: Soil Sediment Solid Sludge Vater	DS = Drum Solid DL = Drum Liani T = Tissue WI = Wine L = Lianid	
Relinquished By				·	Date/Time		Received By			Date/Time	$ \begin{array}{ccc} O & = & O \\ A & = & A \end{array} $		V = Vegetation X = Other	
Relinquished By					Date/Time		Received By			Date/Time		•		
ETNAL SAMDI	E Dienocal l	Method	(e.g. Return to	customer ner	lah procedure used	d in proce	l ess)	Disposed B	3v			Date/Time		

Disposed By

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

FINAL SAMPLE

DISPOSITION



D	atc/Time Received: 7-31.06 14:0	6-	•
			•
W	ork Order Number: 16 6-310 193 ipping Container ID: SML - 442	NA[] SAL	#: WOG-007 NA[]
Sh	ipping Container ID: SML - 442	- or custody #_	W06-007-120,126
1,	Custody Scals on shipping container inte	Air Bill # N/A	
2,	Custody Seals dated and signed?	1	VA[] Yes [] No[]
3.	Chain of Custody record present?	, ,	IA[] Yes[] No[]
4.	Cooler temperature:NA-[]	5. Vermiculita /	Yes-[] No[]
б.	Cooler temperature: NA-[]  Number of samples in shipping container	: 8	terials is NAH Wet[] Dry[]
7.	Sample holding times exceeded?	,	•
8.	Samples have:tape	N.	A [Yes [] No []
	custody seals	hazard la	abels
9,	Samples are:in good condition	appropri	ate samples labels
	broken	leaking	•
10.	Sample pH taken? NAIL num	Only for samp	Pubbles les requiring head space)
11.	() pri\2)	J PALE 2   Believed	ed pH[]
**,	Sample Location, Sample Collector Listed? *For documentation only. No corrective ac		
12,	Were any anomalies identified in sample rec	raint?	Yes[]No[]
13,	Description of anomalies (include sample nu	umbers): N/A	Yea[] No[]
		, , , , , , , , , , , , , , , , , , , ,	
Sample	Custodian: Delih	D. 7.21	
Çlic	nt Sample ID Analysis Requested	Date: 7:31.	06 14:05
	7.7-05100	Condition	Comments/Action
<u> </u>			
Client Info	primed onby	Person contacted	
•	tion necessary; process as is.	, •	
Project Ma	nager	Date_	
LS-023, 12	/05, Rey. 6		

Dot Stewart 509-376-5056  SAF No.  106-055  Project Title 2ZP1-LOI, AUGUST 2006  Shinned To (Lab) Severn Trent Incorporated, Richland  Dot Stewart  Sumpling Origin Hanford Site  Lice Chest No. SML-442  Temp.  Bill of Lading/Air Bill No.  Govt. Vehicle	FAX
SAF No.  106-055  Proiect Title 2ZP1-LOI, AUGUST 2006  Shinned To (Lab)  Seven Trent Incorporated, Richland  DOTS-SAWS-HOY  Method of Shipment Govt, Vehicle  DOTS-SAWS-HOY  Method of Shipment Govt, Vehicle  DOTS-SAWS-HOY  Method of Shipment Govt, Vehicle	
Project Title 2ZP1-LOI, AUGUST 2006  Shinned To (Lab) Severn Trent Incornorated, Richland  Method of Shipment Govt, Vehicle  Ice Chest No. SML-442 Temp.  Bill of Lading/Air Bill No.	
Shinned To (1.ab)  Method of Shipment Severn Trent Incorporated, Richland Govt, Vehicle  Method of Shipment Govt, Vehicle	
Protocol Priority: 45 Days Offsite Property No.	
POSSIBLE SAMPLE HAZARDS/REMARKS  ** **  SPECIAL INSTRUCTIONS Hold Time Total Activity Exemples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not a 14 days.  Submit invoices & deliverables to DL Stewart, PNNL	nntion: Yes V No to exceed SDG closure of
Sample No. Lab ID * Date Time No/Type Container Sample Analysis	Preservative
B1K649 W 8/1/6 ILSZ 1x1000-mL P 906.0_H3_LSC: Tritium (1) None	
B1K649         W         1         1x20-mL P         Activity Scan         JAE5J         None	
B1K649 W 1x500-mL P TC99_ETVDSK_LSC: Tc-99 (1) HCl to pH <2	

	14	(50 )	14'2	20
Relinquished By Print D. P. CONNOLI Relinquished By Relinquished By	AUG 0 1 2006  Date/Time  Date/Time	Received By  Received By	h Sign AUG 0 i 2006 Date/Time  Date/Time	Matrix *  S = Soil DS = Drim Solid SE = Sediment DI = Drim Lioni SO = Solid T = Tissue SI = Sludge WI = Wine W = Water I = Lionid O = Oil V = Vegetation A = Air X = Other
Relinquished By	Date/Time	Received By	Date/Time	
FINAL SAMPLE Disposal M DISPOSITION	Aethod (e.g., Return to customer, per lab procedure, used in p	process)	Disposed By	Date/Time



Date/Time Received: 8.106 1420	
Clienty PGW SDG#: WO4970 NA[] SAF#: IO6-055 NA[ Work Order Number: 16/1010297 Chain of Custody # Total	
Work Order Number: 16/4010297 Chain as C	· ٦
Simpping Container ID: Smi	j
1. Custody Seals on shipping container intact?	
2. Custody Seals dated and signed?  NA[] Yes [] No[]	
3. Chain of Custody record present?  NA[] Yes [] No[]	
4. Cooler temperature: NAII (Yes [] NoII	
4. Cooler temperature: NA [] 5:Vermiculite/packing materials is NA []-Wet [] Dr  6. Number of samples in shipping container: /	7, [ 7
7. Sample holding times exceeded?	<i>እ</i> [ ]
8. Samples have:  NA[] Yes [] No []	
9. Samples are:  ——appropriate samples labels  ——in good condition	
have air bubbles  (Only for samples requiring head space)  10. Sample pH taken? NA[] pH2[] pH>2[] adjusted pH[]	
*For documentation only. No corrective action needed.  Yes:[] No[]	
12. Were any anomalies identified in sample receipt?  13. Description of anomalies (include sample numbers):     Were any anomalies identified in sample receipt?  Yes [] No []	
Sample County	~
Sample Custodian: Analysis Pagnet 1  Client Sample ID Analysis Pagnet 1  Client Sample ID Analysis Pagnet 1	~
Chefit Sample ID Analysis Requested Condition Comments/Action	···)
7.0101	1
Client Informed on by Person contacted	f
[] No action necessary; process as is,	
Project Manager Date	
LS-023, 12/05, Rev. 6	

DNNI

C.O.C.#

. 16	HO10=	199	'		<b>CHAI</b>	VOF	CUSTODY/S	SAMPLE	ANALYSIS I	REQUEST		50	16-00	7-48
	40103 WO4	971	17	ne 9.1	5-06							Page 1	of	1
Collector	VOLLY					Contact/Re				<b>Telephone No.</b> 509-376-5056	MSIN	FAX		
SAF No. S06-007				······································	S	Sampling C Hanford	)rigin		1	Purchase Order/Char				
Project Title SURV, JULY 20	006						g AWS	4106		Ice Chest No.5 m L	595 Te	mp.		
Shinned To (Lah) Severn Trent Inc	enovaciono y no madra escapacione sectorativa (il	hland		NAMES OF THE PERSON OF THE PER	necessistemessessessessessessessessessessessesses	Method of Govt. Ve	Shipment			Bill of Lading/Air Bill	No.			
Protocol SURV		Anthon College Andrews	Anna Carlos Carl		of careful contracts the form part of profession ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )			rity: 45 Days		Offsite Property No.				
POSSIBLE SAMP ** **	PLE HAZARI	OS/RE	MARKS					14 days.	TRUCTIONS Hole GW samples submitted under & deliverables to DL Stewart,		Total Activity SAFs into one SD	Exemption: G, not to exce	Yes 🗹 ed SDG clo	No Dosure of
Sample No.	Lab ID	*	Date	Time	No/Type (	Container			Sample Analysis			Pre	servative	
B1JLB1		W	7.2606	0838	1x1000-mL	Р	906.0_H3_LSC: Tritiu	ım (1)					None	
B1JLB1		W	1	1	1x20-mL F	)	Activity Scan			JAE53	-		None	
B1JLB1		W	V	1	1x1000-mL	Р	9310_ALPHABETA_	GPC: Alpha + Bet	a (2)				HNO3 t	to pH <2
		-	•							- Marine Marine Institute				
									diversity of the state of the s	war and the same a	· · · · · · · · · · · · · · · · · · ·			
		-								and the second s				
		1												
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				O.E.	0.8/1	100			(	EW 8/1/06	***************************************			
	<u> </u>		I		06	14	20/		8/	166	157)			
Relinquished By D. P. CONN	Print OLLY	1/1	Sign	JUL 2	6 2006	ime / /	Received By Welch	Print/	Signy JUL 2	Date/Time / 4.	S = Soil	Matrix		Drum Solid
Relinquished By		/			Date/T	ime	Received By			Date/Time	SE = Sedi SO = Solid SL = Slud W = Wat	i ge	DI. = T = WI =	Drum Liani Tissue Wine Lianid
Relinquished By					Date/T	ime	Received By			Date/Time	O = Oil A = Air			Vegetation Other
Relinquished By					Date/T	ime	Received By			Date/Time				
FINAL SAMPL	1	Method	l (e.g., Return to	customer, per	lab procedure,	used in proc	ess)		Disposed By			Date/Time		



Data div	Sample	Check-in List	
Client: P6	d: 81.06 14		
	SDG#: W	004971 NATI	SAF#: 506-007 NA[]
Work Order Numbe	r: 164010299	Chain of Custo 1	SAF#: SO6-007 NA[]
Shipping Container	10: SML - 595	Air Bill 4	1.#_S06-007-110
I. Custody Se	als on shipping container int	Air Bill #	NIA
2. Custody Sea	als dated and signed?		NA[] Yes [] No[]
3. Chain of Cu	stody record present?	•	NA[] Yes[] No[]
4. Cooler temp	erature: NA-[]	5 Verminute	Yes [] No[]
6. Number of s	amples in shipping contained	r: /	Yes [] No []  materials is NA [] Wet [] Dry []
7. Sample hold:	ing times exceeded?	,	
8. Samples have	<b>3</b>		NA[] Yes[] No[]
custody	'seals	haza	ard labels
9. Samples are:in good	condition		Opriate samples labels
broken		leaki	ng
10. Sample nH tol		/ 101 85	air bubbles amples requiring head space)
ountro pri tak		, year 2 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	inct I requiring head space)
11. Sample Location *For document	on Commit of the	·	justed pH[]
	anon omy. No corrective ac	ction needed.	Yes[] No[]
13. Description of a	nalies identified in sample re	ceipt?	Yes[] No FJ
	- American Sample m	umbers): /y///	
0	f ()		
Sample Custodian:	1. Welch	Date:S	1.06 14:00
Client Sample ID	Analysis Requested	Condition	1,30
			Comments/Action
Client Informed on	by		
[] No action necessary; pro		Person contacted	d
Project Manager	Area as 12'		
LS-023, 12/05, Rev. 6		Date	
· · · · · · · · · ·			

PNNL 06 H010 301

#### CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.
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W06-008-328

	W049	7/	$\square$	ue 9-15	.06							Pag	ge <u>1</u> of <u>1</u>	
Collector D. P. CC	NNOLLY	,				Contact/Requester Dot Stewart				Telephone No. MSIN FAX 509-376-5056				
SAF-No. W06-008						Sampling Origin Hanford Site				Purchase Order/Charge Code				
Project Title RCRA, AUGUS	Г 2006					DTS - SAWS - H104				Ice Chest No. SML-44Z Temp.				
Shinned To (Lab) Severn Trent Inc	ornorated. Ric	nland				1 100			Bill of Lading/Air Bill No.					
Protocol RCRA	RCRA					Priority: 45 Days			Offsite Property					
POSSIBLE SAMP ** **	LE HAZARD	S/RE	MARKS					SPECIAL INSTRUCT Batch all PNNL GW samp 14 days. Submit invoices & deliver	oles submitted under '	, ,	Total Act	ivity Exem	nption: Yes V N to exceed SDG closur	o L re of
Sample No.	Lab ID	*	Date	Time	No/Type	Container	tainer Sample Analysis						Preservative	
B1K2Y1		W	8/1/6	0931	1x20-mL	Р	Activity Scan				None			
B1K2Y1		W	1		1x1000-m	ıL P	906.0_H3_LSC: Tritio	um (1)	JAE5	9	None			
B1K2Y1		W	V	Y	1x500-mL	. P	TC99_ETVDSK_LS0	C: Tc-99 (1)			HCl to pH <2			
		_						The same supposed to the same						
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								- A						
	1	1	1	1	l						1			

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Relinquished By P. CONN	Print Sign	Date/Time  Alig 0 1 2006	Received By	Welch Sign	Date/Time AllG 0 1 2006	Mat  S = Soil	DS = Drum Solid
Relinquished By		Date/Time	Received By		Date/Time	SE = Sediment SO = Solid SL = Sludge W = Water	DI = Drum Liqui T = Tissue WI = Wine I = Liquid
Relinquished By		Date/Time	Received By		Date/Time	O = Oil A = Air	V = Vegetation X = Other
Relinquished By		Date/Time	Received By		Date/Time		
FINAL SAMPLE	Disposal Method (e.g., Return t	o customer, per lab procedure, used in p	rocess)	Disposed By		Date/Tin	ne

PNNL	16	401	0301
		w	04971

#### CHAIN OF CUSTODY/SAMDLE ANALYSIS DEOLIEST

C.O.C.# W06-008-322

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ere	9.15.0	?			Page	1	of	
	CHAI	OF CUSTOD I/SAMIFLE ANALISIS I	CLV	JESI		•	000	

				leve 9º	13.06							Page $\underline{1}$ of $\underline{1}$		
Collector D.P. CONN	MIY				Contact/Re Dot Stew			T	elephone No. 509-376-5056	]	MSIN	FAX		
SAF No. W06-008			***************************************		Sampling C Hanford	)rigin		Pi	urchase Order/	Charge Co	de			
Project Title RCRA, AUGUST	2006						25-H104	Ic	ce Chest No.	xc - 4	طک Ten	np.		
Shinned To (Lab) Severn Trent Inco		hland								Bill of Lading/Air Bill No.				
Protocol RCRA		1.0460 to 1200 in				100				No.				
POSSIBLE SAMPI ** **	LE HAZARI	OS/RE	MARKS				SPECIAL INSTRUCTIO Batch all PNNL GW samples 14 days. Submit invoices & deliverable	submitted under "W"	", "S", "I", "A" or "	Tota G" 06 SAFs	l Activity E into one SDG	xemption: Yes V No i, not to exceed SDG closure of		
Sample No.	Lab ID	*	Date	Time	No/Type Container		Samp	ole Analysis				Preservative		
B1K2Y5		W	8/1/6	1056	1x20-mL P	Activity Scan	- The second			None				
B1K2Y5		W	ı	1	1x1000-mL P	906.0_H3_LSC: Trition	ım (1)	JAED	5C	None				
B1K2Y5		W	4	V	1x500-mL P					HCl to pH <2	2			
		<u> </u>												
								The second secon			****			
									<del></del>	• • • • • •	1- 4	· · · · · · · · · · · · · · · · · · ·		
							•							
		<u> </u>									***************************************			
		<u> </u>												

		14:20			14:20			
Relinquished By D. P. CONN	Print Sign All 0 1 :	Date/Time	Received By Will	No. Welch AIR	Date/Time 0 1 2006	S = Soil	Matrix *  DS = Drum Sol	ilid
Relinquished By		Date/Time	Received By		Date/Time	SE = Sediment SO = Solid SI = Sludge W = Water	DI. = Drum Lia T = Tissue WI = Wine L = Liauid	mi
Relinquished By		Date/Time	Received By		Date/Time	O = Oil A = Air	V = Vegetation X = Other	חר
Relinquished By		Date/Time	Received By		Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, po	er lab procedure, used in pr	rocess)	Disposed By		Date	/Time	

PNNL 161	40103 W049	01	7/40	9.154	CHAIN OF (	CUSTODY/	SAMPLE ANALY	YSIS REQUES	1	Page <u>1</u> of <u>1</u>
Collector	F.T.SIC	KIE						Telephone No		
SAF No.	124 12 maran	10 15 00 pt 20 pt			Dot Stew Sampling C			509-376-50 Purchase Ord	56 ler/Charge Code	
W06-008 Project Title					Hanford S	Site	<u> </u>	( Ice Cheet No.		· · · · · · · · · · · · · · · · · · ·
RCRA, AUGUST	2006						5-SAWS-H10		<u> </u>	Temp.
Shinned To (Lab) Severn Trent Inco	ornorated Ricl	hland	CONCRETE TO SERVICE METERS OF		Method of S Govt. Ve			Bill of Lading	/Air Bill No.	
Protocol RCRA		e o nem tio o com		ekiri anaman kari kalenda ya seniri ya sanasa da			ority: 45 Days	Offsite Prope	rty No.	· · · · · · · · · · · · · · · · · · ·
POSSIBLE SAMP) ** **	LE HAZARD	S/RE	MARKS				SPECIAL INSTRUCTIONS Batch all PNNL GW samples subit 14 days. Submit invoices & deliverables to	mitted under "W", "S", "I", "A"	Total Activ or "G" 06 SAFs into one	vity Exemption: Yes V No e SDG, not to exceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample A	analysis		Preservative
B1K2Y9	- minite	W	8/1/06	1216	1x20-mL P	Activity Scan			None	1
B1K2Y9		W	1	1	1x1000-mL P	906.0_H3_LSC: Triti	um (1)		None	
B1K2Y9		W			1x500-mL P	TC99_ETVDSK_LS0	C: Tc-99 (1)	JAE6D	HCI to pH <2	
B1K2Y9		W	4		2x4000-mL G/P	I129LL_SEP_LEPS_			None	
$\overline{}$				) ( ) ( ) ( )	100					
				D Wa	1.100					
				<del>}</del>	8/100					
								Management of the second of th		
				<del>                                     </del>				,		·
Relinquished By  Relinquished By	Print Print			AU	iG 0 1 2006	D Received By L. Weller Received By	rint Welch	Date/Tir <b>AUG 0 1 2006</b> Date/Tir	ne SE =	Matrix *  Soil DS = Drum Sol Sediment DI. = Drum Lia
Relinquished By					Date/Time	Received By		Date/Tit	SL = W =	
Relinquished By					Date/Time	Received By		Date/Tir	ne	

Disposed By

Date/Time

FINAL SAMPLE

DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

	110002	151							ľ	C.O.C. #		1
PNNL J6	H01030	ン/ フ/			CHAIN OF	CUSTODY/9	SAMPLE ANALYS	IS REQUEST		$\mathbf{W0}$	6-008-2	98
l	W047	$\mathcal{T}_{\alpha}$	4 9119							Page 1	<u>l</u> of <u>1</u>	
Collector				3 9	Contact/Re			Telephone No.	MSIN			-
SAF No.	R.T.SIC	KLE	<u></u>		Dot Stew Sampling (			509-376-5056 Purchase Order/9	Charge Code			
W06-008					Hanford	Site	0			T.	***************************************	
Project Title RCRA, AUGUST	Г 2006						SAWS-HIOG	Ice Chest No.	ML-595	Temp.		
Shinned To (Lab) Severn Trent Inco	ornorated Rici	hland	HALFERD SOURCE CONTRACTOR CONTRAC		Method of a			Bill of Lading/Ai	r Bill No.			
Protocol				Contract Con	TVY L. Y C		rity: 45 Days	Offsite Property	No.	****		
RCRA POSSIBLE SAMP	LE HAZARD	S/REI	MARKS				SPECIAL INSTRUCTIONS	Hold Time	Total Acti	ivity Exemption:	Yes V N	lo 🗆
** **							Batch all PNNL GW samples submitted 14 days. Submit invoices & deliverables to DL S		G" 06 SAFs into or	ne SDG, not to exce	eed SDG closur	re of
Sample No.	Lab ID	*	Date	Tirne	No/Type Container		Sample Analy	ysis		Рте	eservative	
B1K2W3		w	8/1/06	1116	1x20-mL P	Activity Scan	-4		None	<u> </u>		
B1K2W3		w	1		1x1000-mL P	906.0_H3_LSC: Tritiu	ım (1)		None			
B1K2W3		W			1x500-mL P	TC99_ETVDSK_LSC	C: Tc-99 (1) JA	=6K	HCI to pH <2		-	
B1K2W3		W	V	V	2x4000-mL G/P	I129LL_SEP_LEPS_	GS_LL: I-129 (1)		None			
			<u> </u>	<u> </u>	<u> </u>							
			<u></u>	l was	100							
		$\left  \cdot \right $	$ \!$	+~~	8/1/00		- Marco					
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		$\vdash$		$\leftarrow$								
		-						1.011.7 to				
				·	14:20			,	4:50			
Relinquished By	Print		Sign		Date/Time	Received By	L S-Welch Sign	Date/Time		Matri	x *	
Relinquished By		4	<u> </u>	AUG	Date/Time	Received By	US. Welch	AUG 0 1 2006  Date/Time	SE =	Soil Sediment		um Liaui
Consquency Dy					Dute Time			Switch Falls	SI. =	Solid Sludge Water	$T = Tiss$ $WI = Win$ $I_{\cdot \cdot} = Lign$	ine
Relinquished By					Date/Time	Received By		Date/Time	0 =	Oil Air		getation
Relinquished By				MANAGEMENT AND ASSESSMENT ASSESSMENT AND ASSESSMENT ASSESSM	Date/Time	Received By		Date/Time		4444		
FINAL SAMPLI	E Disposal I	Method	(e.g., Return to	customer, per	lab procedure, used in proc	ess)	Disposed By			Date/Time		

DISPOSITION

C.O.C. #

PNNL JG	W049	7/	9-15-6		CHAIN OF	CUSTODY/S	SAMPLE ANALY	SIS REQUE	CST	C.O.C. #	$egin{array}{c} \mathbf{W06-008-3} \ \mathbf{age}  1  \mathrm{of}  \underline{1} \ \end{array}$	
Collector					Contact/R	leauester	-	Telephone		MSIN	FAX	
SAF No.	T. SICH	A.E.			Dot Stev Sampling			509-376- Purchase O		e Code		-
W06-008 Project Title					Hanford	i Site						
RCRA, AUGUST	2006	***************************************					5- SAWS- H196	Ice Chest N	<u>"5ML</u>	-595 <sup>Temp</sup>	•	
Shinned To (Lab) Severn Trent Inco	arnorated Ric	hland	ndanipaniakan kanada		Method of Govt. V	f Shipment		Bill of Ladi	ng/Air Bill	No.		
Protocol		on the second	environment of the second seco	times and an extension of the second second	JOYU. Y		ority: 45 Days	Offsite Pro	perty No.	***************************************		-
RCRA POSSIBLE SAMPI ** **	LE HAZARI	)S/RE	MARKS				SPECIAL INSTRUCTIONS Batch all PNNL GW samples submit 14 days. Submit invoices & deliverables to Di		A" or "G" 06 :	Total Activity Exe SAFs into one SDG, n	mption: Yes 🗹 N ot to exceed SDG closur	lo L re of
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Ana	alysis		· · · · · · · · · · · · · · · · · · ·	Preservative	
B1K2W7		w	8/1/06	1019	1x20-mL P	Activity Scan			None			
B1K2W7		W	17-1-3		1x1000-mL P	906.0_H3_LSC: Tritiu	um (1)		None			
B1K2W7		W			1x500-mL P	TC99_ETVDSK_LSC	D: Tc-99 (1)	E6R	HCI to	pH <2		
B1K2W7		W	V	V	2x4000-mL G/P	I129LL_SEP_LEPS_0			None			-
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		+-									***	
				7	14:	20 /		/-	1:20			
Relinquished By	- Print		Sign	Ası	Date/Time	Received By	Print Sign	Date/	Γime		Matrix *	
Relinquished By				<u>AU</u>	Date/Time	Received By	J. Welch	Alig 0 1 21	îne îne	S = Soil SE = Sediment SO = Solid SI = Sludge W = Water	DS = Dru t DL = Dru T = Tiss WI = Wir L = Lig	om Liaui sue ne
Relinquished By					Date/Time	Received By		Date/	l'ime	O = Oil A = Air		getation
Relinquished By					Date/Time	Received By	- AND THE PROPERTY OF THE PROP	Date/	Γime			
FINAL SAMPLE DISPOSITION	Disposal N	Method	(e.g., Return to	customer, per	lab procedure, used in proc	cess)	Disposed By			Da	ate/Time	

PNNL 16	H01030 W049	01 71 99	-15.00	,	CHAIN OF	CUSTODY/S	SAMPLE ANALYSIS	REQUEST	C.O.C.# W06-008-304 Page <u>1</u> of <u>1</u>		
Collector	a T.SO		-		Contact/Re				ISIN FAX		
SAF No. W06-008	- <u>1,5</u> 14	LE.			Dot Stew Sampling ( Hanford	)rigin		509-376-5056 Purchase Order/Charge Code	r/Charge Code		
Project Title RCRA, AUGUS	Г 2006						TS-SAWS-H106	Ice Chest No. SML-SA	5 Temp.		
Shinned To (Lab)					Method of	Shipment		Bill of Lading/Air Bill No.			
Severn Trent Inc. Protocol RCRA	ornorated Ric	hland		patronominational tronopolitical	Govt. Ve		rity: 45 Days	Offsite Property No.			
POSSIBLE SAMP ** **	LE HAZARI	S/RE	MARKS				SPECIAL INSTRUCTIONS Ho Batch all PNNL GW samples submitted under 14 days. Submit invoices & deliverables to DL Stewart	"W", "S", "I", "A" or "G" 06 SAFs in	Activity Exemption: Yes V No L to one SDG, not to exceed SDG closure of		
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analysis	***************************************	Preservative		
B1K303		W	8/1/06	0915	1x20-mL P	Activity Scan		None			
B1K303		W	1	i	1x1000-mL P	906.0_H3_LSC: Tritiu	ım (1)	None			
B1K303		W			1x500-mL P	TC99_ETVDSK_LSC	Tc-99 (1) JAE67	HCI to pH <2			
	1		<del></del>		2x4000-mL G/P	I129LL_SEP_LEPS_		None			
B1K303		W	V	<u> </u>							
B1K303		W		<u> </u>			water and the second se				
B1K303		W		. 70 00							
B1K303		W .	La	لكعر	8/1/06						
B1K303		8	J.	ر الأعدر	8/1/06						
B1K303		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	L	, 20 O	8/106						

		/ /	4200		14:20	
Relinquished By	Bript	Date/Time	Received By	Print ) Sign	Date/Time	Matrix *
R.T. SICKLE		AUG 0 1 2006	D. Wille	J. Welch	AUG 0 1 2006	S = Soil DS = Drum Solid
Relinquished By	09	Date/Time	Received By		Date/Time	SE = Sediment DI. = Drum Liqui SO = Solid T = Tissue
						SI = Sludge WI = Wine W = Water I = Liquid
Relinquished By		Date/Time	Received By		Date/Time	O = Oil $V = VegetationA = Air$ $X = Other$
Relinquished By		Date/Time	Received By		Date/Time	<u>L</u>
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to cust	omer, per lab procedure, used in pr	Trocess)	Disposed By		Date/Time



Ð	Date/Time Decei	, 0	J ~ C	e Check-in List	•	
	ate/Time Receive	cd: 3.				
		FW.	SDG#: CA	004971 NA[		
W	ork Order Numbe	r: 16H0	70301			6-008 NA[]
Sh	upping Container	DSML-	142 590	Chain of Cus	tody #3/6,39	8-328,322
1.	Custody Sc	als on shipp	ing container in	Air Bill #	14/19	
2,	Custody Se	als dated an	d signed?	itacf?	NA[]Y	[es[] No[]
3,	Chain of Co	istody record	d present?	•	NA[]Y	es [] No[]
4.	Cooler temp	erature:	NA EL	5:Vermiculite/pacl	Y Y	es [] No[]
б.	Number of	amples in sl	nipping contains	3. Vermiculite/pacl	cing materials is	NA F- Wet [] D-
7.	Sample hold	ing times ex	ceode to	er:Q		·
8.	Samples hav		ceededy		NA N Ye	s[] No[]
	custod	y scals		1	lazard labels	
9,	Samples are:			B	ppropriate samp	les labels
	broken	condition		16	aking	
				h	AVA NILL V.	
10.	Sample pH tal	cen?	NA[] pH<2	N 10 CHa N	or samples requi	ring head space)
11.	Sample Locati	on, Sample	~		adjusted pH[]	
1.5		miton only.	No corrective a	ction needed.	Ye	s.[] No[]
12.	Were any anor	nalies identi:	fied in sample re	cceipt?		
13,	Description of	anomalies (i	nclude sample r	numbers): N/A	Yes	[] No []
· · · · · ·		-		-		
Sample	Custodian:	<u> A. L</u>	Velih	Date:	8.1.06	
Çli	ent Sample ID	Analys	is Requested	7	21.06	14:20
				Condition	C	omments/Action
		L				
uent Inf	ormed on	b)	/	Person contr	acted	
) No po	ction necessary; pr	ocess as is,			,	
roject Ma	anager	· .		Datc		
3-023, 12	1/05, Rev. 6		. '			

TO STATE &		202	2	(cd v )					C.O.C. #	***************************************
PNNL J6	W049	74			CHAIN OF	CUSTODY	/SAMPLE ANAI	LYSIS REQUEST		G06-007-7
Collector CON		1-	) we 9-19	3 -06	Contact/Re	quester		Telephone No. MSI	<u> </u>	<u>1</u> of <u>1</u> <b>X</b>
SAF No.					Dot Stev Sampling 0			509-376-5056		was a second
G06-007					Hanford			Purchase Order/Charge Code		
Project Title 1NR2-RB, JULY	Y 2006					9AWS-1	4106	Ice Chest No. SML 390	— <del>Te</del> mp.	
Shinned To (Lab)		NAME OF THE OWNER, OWNE			Method of	Shipment		Bill of Lading/Air Bill No.		
Severn Trent Inc Protocol SURV	cornorated Ric	hland			Govt. Ve		iority: 45 Days	Offsite Property No.		
POSSIBLE SAME	PLE HAZARI	OS/RE	EMARKS				SPECIAL INSTRUCTION Batch all PNNL GW samples s 14 days. Submit invoices & deliverables	submitted under "W", "S", "I", "A" or "G" 06 SAFs into		on: Yes V No L exceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample	e Analysis	I	Preservative
B1JK54		W	7-26-06	0947	1x20-mL P	Activity Scan				None
B1JK54		W	1	1	1x1000-mL P	906.0_H3_LSC: Tr	itium (1)	JAEGW		None
B1JK54		W			1x1000-mL P	9310_ALPHABETA	A_GPC: Alpha + Beta (2)			HNO3 to pH <2
B1JK54		W			3x1000-mL G/P	GAMMA_GS: List-	1 (10)			HNO3 to pH <2
B1JK54		W	1	1	3x1000-mL G/P	SRISO_SEP_PRE	CIP_GPC: Sr-90 (1)			HNO3 to pH <2
		lacksquare								
		<u> </u>					West Annual Control of the Control o			
				l po	8/1/06		WEST ALLES OF THE STATE OF THE			
				Dem.				2W. 8/4/66	····	
Relinguished BXN	IOLLY Print		Sign	8/1/	Date/Time/4;30	Received By	Print? Sig	8/1/66 m 1111_2.6.2006	Mar	trix *
Relinquished By	<u> </u>		<u>/</u>	<del>JUL 2-6</del>	Date/Time	Received By	in s. weich	Date/Time SE SO SI SI SI	= Soil = Sediment = Solid = Sludge	DS = Drum Sc DI = Drum Li T = Tissue WI = Wine L = Liquid
Relinquished By					Date/Time	Received By		Date/Time O	= Water = Oil = Air	V = Vegetati X = Other
Relinquished By					Date/Time	Received By		Date/Time		

FINAL SAMPLE

DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

PNNL JG/	401030 W049	 33 71 <sub>T</sub>	)un 9.15	5-177-	CHAIN	OF	CUSTODY/	SAMPLE ANA	LYSIS REQUEST		06-007-10 1 of 1
cவுக்கூ CONI	VOLLY		The 1/1-		C	ontact/Re			Telephone No.	MSIN FAX	
SAF No. G06-007					S	Dot Stew ampling C Hanford	rigin		509-376-5056 Purchase Order/Charge C	Code	
Project Title 1NR2-RB, JULY	7 2006					Hamolu	SAWS	-4106	Ice Chest No SML S	95 Temp.	
Shinned To (Lah) Severn Trent Inc		hland			N. C.	<b>lethod of</b> Govt. Ve	Shipment		Bill of Lading/Air Bill No.		
Protocol SURV				konsuporensi konsuler konsulensi Exportensi konsulensi konsulensi konsulensi konsulensi konsulensi konsulensi		OUVI. VC		ority: 45 Days	Offsite Property No.		
POSSIBLE SAMP	LE HAZARI	OS/RE	EMARKS					SPECIAL INSTRUCTIO Batch all PNNL GW samples 14 days. Submit invoices & deliverable	submitted under "W", "S", "I", "A" or "G" 06 SAF	otal Activity Exemption is into one SDG, not to exc	
Sample No.	Lab ID	*	Date	Time	No/Type C	Container		Samp	ole Analysis	Pro	eservative
B1JK58		w	7-26-06	1027	1x20-mL P		Activity Scan				None
B1JK58		W	1		1x1000-mL	Р	906.0_H3_LSC: Triti	um (1)			None
B1JK58		W			1x1000-mL	Р	9310_ALPHABETA_	GPC: Alpha + Beta (2)	JAE6X		HNO3 to pH <2
B1JK58		W	S S S S S S S S S S S S S S S S S S S		3x1000-mL	G/P	GAMMA_GS: List-1	(10)			HNO3 to pH <2
B1JK58		W	4	4	3x1000-mL	G/P	SRISO_SEP_PREC	IP_GPC: Sr-90 (1)			HNO3 to pH <2
					w. 81	1,196	\				
									8/1/06 8/1/06		
Relinquished By  D. P. CONI  Relinquished By  Relinquished By	NOLLY (		Sign	8/1 <sub>1</sub>	Date/Ti	me	Received By Received By	Print Welch	JUL 2.6 2006  Date/Time	S = Soil SE = Sediment SO = Solid SI = Sludge W = Water O = Oil A = Air	DS = Drum Solid DI. = Drum Liqui T = Tissue WI = Wine L = Liquid V = Vegetation X = Other

Received By

Date/Time

FINAL SAMPLE DISPOSITION

Relinquished By

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

Date/Time



Ð	Pate/Time Received: 8	1.00 14:	20		•	
, C	lient P6W	SDG #: / 1/4	doni		•	
W	ork Order Number: 1614	-010,362	NA NA	[] SAF#	:G06-007	Mari
Sh	upping Container ID: 300	1595		way# 6	06-607-7,	10
1,	Custody Seals on shi			NA		····
2,	Custody Seals dated	and signed?	77	NA	[] Yes [] No []	·
3,	Chain of Custody rec	Ord presents		NA	[] Yest I No []	
4.	Cooler temperature:	NA F7 C		•	Yes H Noll	
6.	Cooler temperature:  Number of samples in	shipping container.	Yermiculite/pac	king mater	ials is NA [] Wet	ווסשינו
7.	Sample holding times	exceeded?	- BA			(151)[]
8,	Samples have:tape			) AM	Yes [] No []	
9,	custody seals  Samples are:  in good condition broken				els samples labels	
10. 11.	Sample pH taken?	NA[] pH<2]	(Only f	eaking have air but or samples adjusted p	requiring head spa	·ce)
12.	and aminon only	y. No corrective actic	n needed.		Yes [] No[]	
13,	Were any anomalies ider Description of anomalies	atified in sample recei (include sample num	pt? bers)://	/ <i>Э</i>	Yes[] Noff	
,						
	Custodian: A.W.	uch _	Date:	8.1.	01 11	
Çli	ent Sample ID Ana	lysis Requested	Condition	-		20
					Comments/Actio	n .
Client Inf	ormed on					
!	ction necessary; process as is.	by	Person cont	acted		
•	nnager		_			-
	405, Rcy. 6	. '	Date			***************************************

PNNL )(	6.40103 W049	305	5 Du	u 9.15	CHAIN OF	CUSTODY/	SAMPLE ANALYSIS I	REQUEST	C.O.	C.# 106-055-122 Page 1 of 1
Collector					Contact/Ro			<b>Telephone No.</b> 509-376-5056	MSIN	FAX
SAF No. 106-055	a May Parthus				Sampling G	Origin		Purchase Order/C		
Project Title 2ZP1-LOI, AU	GUST 2006					5- SALL	H 109	Ice Chest No. SA	ws 320 T	emp.
Shinned To (Lah Severn Trent In	o ncorporated, Rici	hland			Method of Govt. Vo			Bill of Lading/Air		
Protocol CERCLA					7		ority: 45 Days	Offsite Property N	No.	
POSSIBLE SAM	IPLE HAZARD	S/RE	EMARKS				SPECIAL INSTRUCTIONS Hole Batch all PNNL GW samples submitted under '14 days. Submit invoices & deliverables to DL Stewart,		Total Activity " 06 SAFs into one SE	Exemption: Yes V No G, not to exceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analysis			Preservative
B1K657		W	8-1-06	0957	1x1000-mL P	906.0_H3_LSC: Triti	um (1)		Vone	
B1K657		W		1	1x20-mL P	Activity Scan		1	Vone	
B1K657		W			2x4000-mL G/P	I129LL_SEP_LEPS_	GS_LL: I-129 (1) JAE61	1	Vone	

TC99\_ETVDSK\_LSC: Tc-99 (1)

HCl to pH <2

B1K657

DISPOSITION

W

1x500-mL P

	/5.	00 /	15	500	
Relinquished By Print Sign	AUG Date/Time	Received By Print Sign	AUG 0 1 2005	Ma S = Soil	atrix *  DS = Drum Solid
Relinquished By	Date/Time	Received By	Date/Time	SE = Sediment SO = Solid SL = Sludge W = Water	DI. = Drum Liqu T = Tissue WI = Wine L = Liquid
Relinquished By	Date/Time	Received By	Date/Time	O = Oil A = Air	V = Vegetation X = Other
Relinquished By	Date/Time	Received By	Date/Time		

PNNL J6	H0103 W049	05	Due 9.	15.06	СНАІ	N OF	CUSTODY/	SAMPLE A	NALYSIS	REQUEST		C.O.C. # I06-055-170  Page 1 of 1
Collector			<u> </u>			Contact/Re				<b>Telephone No.</b> 509-376-5056	MSIN	
SAF No. 106-055		-				Sampling Origin Hanford Site			Purchase Order		10 C C C C C C C C C C C C C C C C C C C	
							チャシ	4109		Ice Chest No.	on 5 3 70	, Temp.
Shinned To (1.ah) Severn Trent Inc	POR PROPERTY OF THE PROPERTY O	hland		***************************************	OCCUPATIONS CARROLL STREET, CARROLL STREET, CARROLL STREET, CARROLL STREET, CARROLL STREET, CARROLL STREET, CA	Method of Govt. Ve				Bill of Lading/		
Protocol CERCLA	<u> </u>			indrojentovini distributi katorije prijekaje		OUVL VC		ority: 45 Days		Offsite Propert	v No.	
POSSIBLE SAME	PLE HAZARI	OS/RE	EMARKS					14 days.			Total Act "G" 06 SAFs into o	ivity Exemption: Yes M No ne SDG, not to exceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type	Container			Sample Analysis			Preservative
B1K688		W	6-106	1107	1x1000-m	LΡ	906.0_H3_LSC: Triti	um (1)			None	· · · · · · · · · · · · · · · · · · ·
B1K688		W	8-1-06	1	1x20-mL	Р	Activity Scan	-,	JAEG	4-545/12/06	None	
B1K688		W	l		2x4000-m	L G/P	I129LL_SEP_LEPS_	GS_LL: I-129 (1)	JAGE	7	None	
B1K688		W	*	•	1x500-mL	Р	TC99_ETVDSK_LS0	C: Tc-99 (1)	-		HCl to pH <2	
		$\vdash$										

	15	$\overline{5}$ 00 $\Omega$	15:0	TO TO THE PARTY OF
Relinquished By Print Sign	Date/Time  **RG 0 1 2006	Received By Welch Print Welch	Date/Time  AUG 0 1 2006	Matrix *  S = Soil DS = Drum Solid
Relinquished By	Date/Time	Received By	Date/Time	SE = Sediment   DL = Drum Liqui   SO = Solid   T = Tissue   SL = Sludge   WI = Wine   W = Water   L = Liquid
Relinquished By	Date/Time	Received By	Date/Time	O = Oil V = Vegetation A = Air X = Other
Relinquished By	Date/Time	Received By	Date/Time	
FINAL SAMPLE Disposal Method (e.g., Return to customer, per DISPOSITION	lab procedure, used in pr	ocess) Disposed By		Date/Time



Ð	Date/Time Received: 8-1-06 15:	reck-in List
, C	Hente The I	10
W	Vork Order Number: 1614070305	SAF#: 406-055
Sh	hipping Container ID: SAWS - 370	106-055-122
1.	Custody Scals on shipping container intact?	Air Bill # W/A
2,	Custody Scals dated and signed?	NA[] Yes-[] No[]
3,	Chain of Custody record present?	NA[] Yes[] No[]
4.		
6.	Number of samples in shipping container:	Yes [] No []  Yermiculite/packing materials is NA []-Wet [] Dry []
7.	Sample holding times exceeded?	
8.	Samples have:	NA [] Yes [] No []
9,	custody seals Samples are:	hazard labels appropriate samples labels
	in good condition broken	leaking
10.	Sample pH taken? NAI numery	Only for samples requirement
11.	Sample Location Garage	adjusted pH[]
12.	*For documentation only. No corrective action  Were any anomalies identified in sample receip	needed. Yes [] No[]
13,	Description of anomalies (include sample numb	Yes [] Not]
		1 + 2 + 1
Sample	Custodian:	
Çlic	ent Sample ID Analysis Requested	
	idialysis Requested	Condition Comments/Action
Client Info	formed onby	Person contacted
[ ] No ac	ction necessary; process as is,	
Project Ma	anager	Date_
LS-023, 12	2/05, Rcy. 6	

\$ 1 c	1 . 4 2 5 6		lita	40103	06(50)			C.O.C.#
'NNL <del>Jet</del>	1-01-0-00 1-00-491	7/	15.	sw.	CHAIN OF	CUSTODY/SAMPLE ANALY	SIS REQUEST	106-054-8
	7	)we	9-48	0%			•	Page <u>1</u> of <u>1</u>
lector 5								ISIN FAX
F No.	d dated d. Sharetter				Dot Stew Sampling (		509-376-5056 Purchase Order/Charge Code	2
06-054			····	***************************************	Hanford			
iect Title UP1-LOL AUG	UST 2006				{	OTS- SAWS HIOS	Ice Chest No.	70 Temp.
nned To (Lab)	031 2000	simals removemen			Method of		Bill of Lading/Air Bill No.	
Severn Trent Inco	ornorated Ric	hland			Govt. Ve	Phicle		
otocol SURV						Priority: 45 Days	Offsite Property No.	
OSSIBLE SAMPI	- MARINE - M		Ţ.,	<b>1</b>		SPECIAL INSTRUCTIONS  Batch all PNNL GW samples subm 14 days.  Submit invoices & deliverables to I	nitted under "W", "S", "I", "A" or "G" 06 SAFs in	Activity Exemption: Yes V No no SDG, not to exceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Ar	nalysis	Preservative
1K542		W	8-1-06	1307	1x20-mL P	Activity Scan	None	
1K542		W	1	1	1x500-mL G/P	UTOT_KPA: Uranium (1)	9E65 HNO3 to pH <	2
1K542		W		1	2x4000-mL G/P		None	rannouncement
			7	,				
		1						
		1						
		<del>                                     </del>						

Reinquished By	Print	Date/I me	Received by Print Sign	AUG 0 1 2005	Marix *
Relinquished By	AUG AUG	0 1 2006 Date/Time	Réceived By	Date/Time	S         = Soil         DS         = Drum Solid           SE         = Sediment         DI         = Drum Liqui           SO         = Solid         T         = Tissue           SI         = Sludge         WI         = Wine           W         = Water         I         = Liquid
Relinquished By		Date/Time	Received By	Date/Time	O = Oil V = Vesetation A = Air X = Other
Relinquished By		Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab p	procedure, used in pro-	cess) Disposed By		Date/Time

DAINI SHE	<del>//6103</del>	05	5 J6	HOIO	306 (	(بعني					C.O.C.		
PNNL J6	W049	77/	'		CHA	NOF	CUSTODY/	SAMPLE ANA	LYSIS R	EQUEST		I06-054-	.9
	D	il '	9.15.0	6								Page <u>1</u> of <u>1</u>	
Collector	EWAMT.					Contact/Re				<b>Telephone No.</b> 509-376-5056	MSIN	FAX	$\exists$
SAF No. 106-054						Sampling (	Origin			Purchase Order			
Project Title 2UP1-LOL AUG	LICT 2006						TS SAW 1	H 109		Ice Chest No.	ws 3み6 Tem	<b>D</b> •	
Shinned To (Lah)	nerotament en	anni de la constante de la con	varion and the same supplementary	and the second s		Method of	Shipment			Bill of Lading/A	ir Bill No.		$\exists$
Severn Trent Inc. Protocol	ornorated Ric	hland				Govt. Ve		ority: 45 Days		Offsite Property	No.		$\dashv$
SURV POSSIBLE SAMP ** **	LE HAZARI	OS/RE	CMARKS					SPECIAL INSTRUCTIO Batch all PNNL GW samples 14 days. Submit invoices & deliverable	submitted under "\			emption: Yes 🗹 No not to exceed SDG closure	
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Samp	le Analysis		***************************************	Preservative	
B1K543		W	8-1-06	1307	1x20-mL	Р	Activity Scan			Manual Control of the	None		
B1K543		W		Ì	1x500-ml	_ G/P	UTOT_KPA: Uraniur	n (1)	JAEGG	>	HNO3 to pH <2		
B1K543		W	4	Ţ	2x4000-n	ıL G/P	I129LL_SEP_LEPS_	GS_LL: I-129 (1)			None		
		<u> </u>	· · · · · · · · · · · · · · · · · · ·		-					····			
								MVMV					
		<u> </u>											
		<u> </u>						Water William Committee Co					
		<u> </u>		<u> </u>	<u> </u>	*		THE STATE OF THE S		· · · · · · · · · · · · · · · · · · ·			
							0				<b>-</b>		
						15:	00	200		D	15:00		
Relinquished,Bx ,	Print	$\overline{}$	Sign	1 -	Date.	1 ime	Received By	Print () Si	gn / /	Date/Time		Matrix *	

Relinquished By	Print Sign	Date/Time	Received By Print Sign	Date/Time	Matrix *
F. M. HALL	AUG	0 1 2006	S. Welch S. Welch	AUG 0 1 2005	S = Soil DS = Drum Solid
Relinquished By		Date/Time	Received By	Date/Time	SE = Sediment   DL = Drum Liqui   SO = Solid   T = Tissue   SL = Sludge   WI = Wine
					W = Water I. = Liquid
Relinquished By		Date/Time	Received By	Date/Time	O = Oil $V = VegetationA = Air$ $X = Other$
Relinquished By		Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab p	rocedure, used in proc	Disposed By		Date/Time



Cli	ient. Pou	1: <u>8106 15</u> ) SDG#: a	004971	
Wo	ork Order Number	: 16H010306	NA[] SA	NF#: 106-054 NA[]
Shi	pping Container I	D: JAWS 370	Cham of Custody #	IO6-054-8, 9
1.		als on shipping container in	Air Bill # h2/	0
2,		Is dated and signed?		NA[] Yes[] No[]
3.	Chain of Cu	stody record present?		NY[] Acaly No[]
4.	Cooler temp	erature: NA	5. Vermiculita/~	Yes [] No [] naterials is NA [] Wet [] Dry
б.	Number of s	amples in shipping containe	er; 2	naterials is NA [] Wet [] Dry
7.	Sample holdi	ng times exceeded?		
8.	Samples have			NA [] Yes [] No []
	custody	seals	hazard	labels
9.	Samples are:in good	condition		riate samples labels
	broken		leaking	-1 v-
10.	Sample pH tak	en?	(omy for sam	r bubbles ples requiring head space)
11.		() bit	() Prize[] ading	ted pH[]
	*For document	on, Sample Collector Listed ation only. No corrective a		
12.	Were any anon	palies identified in sample re	cuon needed.	Yes[] No[]
13,	Description of	nomalies (include sample r	numbers):	Yes [] NotT
		n .	:	
Sample	Custodian:	. Welch	Date: 8-/	-07
Clie	nt Sample ID	Analysis Requested		-06 15:00
			Condition	Comments/Action
<del>-                                    </del>				
,	ormed on		Person contacted	
] No ac	tion necessary; pro	ocess as is,	,	
oiect Ma	nager		Date	

PNNL J6	H01030 W0497	7		-	CHAIN OF	CUSTODY/	SAMPLE ANALYSI	S REQUEST	C.o.c	.# W06-008-334
		<u>Dul</u>	4.15.02	2			Man and a superior an			Page <u>1</u> of <u>1</u>
Collector	F. M. HALL				Contact/Re			Telephone No. 509-376-5056	MSIN	FAX
SAF No. W06-008					Sampling ( Hanford	Origin		Purchase Order		
Project Title RCRA, AUGU	ST 2006				<u>ت</u>	TS- SAU	S H109	Ice Chest No.	THUS 370 Ten	ip.
Shinned To (Lab Severn Trent Ir	)	hland		MATERIAL SANSON SAN	Method of Govt. Ve	Shipment		Bill of Lading/A		
Protocol RCRA				en e	ing right and most self-elephonoran self-e small		rity: 45 Days	Offsite Property	No.	· • • • • • • • • • • • • • • • • • • •
POSSIBLE SAM ** **	PLE HAZARI	OS/RE	MARKS				SPECIAL INSTRUCTIONS Batch all PNNL GW samples submitted ut 14 days. Submit invoices & deliverables to DL Stee		Total Activity E: "G" 06 SAFs into one SDG:	xemption: Yes V No not to exceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analysis			Preservative
B1K2X7		W	81-06	1037	1x20-mL P	Activity Scan			None	
B1K2X7		W	1		1x1000-mL P	906.0_H3_LSC: Triti	um (1) JAE67		None	
B1K2X7		W	1	1	1x500-mL P	TC99_ETVDSK_LS0			HCl to pH <2	
			^	*						
		<u> </u>								
							NAME OF THE PERSON OF THE PERS			

		150	DO O		15:00	)
Relinquished By	Print Sign	Date/Time	Received By	Print Sign	Date/Time	Matrix *
Relinquished By	AUG AUG	0 1 2006 Date/Time	A. Welch Received By	S. Welch	AUG 0 1 2006 Date/Time	S         = Soil         DS         = Drum Solid           SE         = Sediment         DL         = Drum Lioui           SO         = Solid         T         = Tissue           SL         = Sludge         WI         = Wine
Relinquished By	A AMALIAN TO THE STATE OF THE S	Date/Time	Received By		Date/Time	W = Water I. = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By		Date/Time	Received By	and the second s	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab	procedure, used in proc	cess)	Disposed By		Date/Time

PNNL 16	H0103	07			CHAIN OF	CUSTODY/S	SAMPLE ANALYSIS	S REQUEST	С.о.	C.# W06-008-356	
	W047	11	Dug 9-1	5.06						Page <u>1</u> of <u>1</u>	
Collector 🖺	URATEK M. MAII				Contact/R			Telephone No. 509-376-5056	MSIN	FAX	
SAF No. W06-008	<u>. 84 74.8</u>				Dot Stev Sampling Hanford	g Origin Purchase			hase Order/Charge Code		
roject Title RCRA, AUGUS	Т 2006				0	TS - SAL S	H109	Ice Chest No.	∠ 370 T	emp.	
h <u>inned To (Lab)</u>		one de la constante de la cons		NATIONAL PROPERTY AND	Method of	f Shipment	•	Bill of Lading/A	ir Bill No.		
Severn Trent Inc rotocol RCRA	ornorated Ric	hland			Govt. V		rity: 45 Days	Offsite Property	v No.		
OSSIBLE SAME	LE HAZARI	)S/RE	MARKS				SPECIAL INSTRUCTIONS  Batch all PNNL GW samples submitted und 14 days.  Submit invoices & deliverables to DL Stew		Total Activity "G" 06 SAFs into one SD	Exemption: Yes  No G, not to exceed SDG closure of	
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analysis			Preservative	
B1K307		W	8-1-06	1307	1x20-mL P	Activity Scan	100000000000000000000000000000000000000		None		
B1K307		W	L	1	1x500-mL P	TC99_ETVDSK_LSC	C: Tc-99 (1)		HCl to pH <2		
		<b>†</b>	32				JAE68	:			
		<u> </u>					*				
		-									
		-									
		1									
		.1	<u> </u>							and the second s	
					<i> 5</i> :	00 N			15400)		
Relinquished By	Print	<u> </u>	Sign			Received by	Print Sign	Date/Time	an	Matrix *	

Relinquished By	Print Sign AUG	Date/Time 0 1 2006	Received by Welch Print S. W	Pelch AUG 0 1 2005	S = Soil $DS = Drim Solid$
Relinquished By	/	Date/Time	Received By	Date/Time	SE         = Sediment         DI.         = Drum Lioui           SO         = Solid         T         = Tissue           SI.         = Sludge         WI         = Wine           W         = Water         I.         = Liquid
Relinquished By		Date/Time	Received By	Date/Time	O = Oil V = Vegetation A = Air X = Other
Relinquished By		Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab pr	rocedure, used in proc	cess) Dispo	osed By	Date/Time



Ð	ate/Time Received	1: <u>8:1.06</u>	ple Check-in List	
. C	lient: PG  ork Order Number  upping Container I		Chain of Custod	SAF#: WO6-OO8_NA[] y#_WO6-OO8-334,356
2,	Custody Sea	ls dated and signed?	· mract/	NA[] Yes [] No[]
3.		stody record present?	· <b>,</b>	NA[] Yest] No[]
4.	Cooler tempe	erature: NA-[]	5:1/2	Var.tz
б.	Number of sa	imples in shipping conta	iner:	g materials is NA4] Wet[]Dry[]
7.	Sample holdi	ng fimes exceeded?		
8,	Samples have			NA[] Yes[] No[]
9.	Custody Samples are:in goodbroken		app	ard labels ropriate samples labels ing
10.	Sample pH take	en?	(Omy tot 8)	air bubbles (samples requiring head space)
11.	Sample Locatio *For documents	on, Sample Collector Lisation only. No correctiv	,	ljusted pH[]  Yes[] No[]
12,	Were any anom	alies identified in sampl	c receipt?	· - 25-6-1 140[]
13,		nomalies (include sampl		Yes[] No[]
<del></del>				
	Custodian	. Welch	/Date;8.	1.06 15:00
Çli	ent Sample ID	Analysis Requested	Condition	70.00
				Comments/Action
Client Info	ormed on	by	Person contact	ed .
[] No po	ction necessary; pro	cess as is,		1
Project Ma	ıлаger		Date	
LS-023, 12	1/05, Rey. 6			

8/23/2006 11:25:31 AM		Sample Preparation/Analysis Balance Id:2061							
384868, Pacific Northwest National Labo Pacific Northwest National Lab	oratory ,	BN I-129 Prp/Se TB Gamma by L					Pipet #	<b>!</b>	
	4971	51 CLIENT: HAI					Sep1 DT/Tm Tech	:	
Batch: 6215550 WATER SEQ Batch, Test: None	pCi/L		PM, Qu	ote: HC , 576	71	1,	Sep2 DT/Tm Tech	:	
SEQ Baton, Test. None						100000 10000 1	Prep Tech	: DillonM	
Work Order, Lot, Total Sample DateTime Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
<b>1 JAE6D-1-AC</b> J6H010301-3-SAMP	3927.40g,in	ITA5633 08/18/06		37.4	100	L5	1110	919	106 x
08/01/2006 12:16	AmtRec: 20	DML,500ML,LP,2X4LP	#Containers: 5			Scr:	Alpha: 2.35E-04 uCi/Sa	Beta: 1.:	28E-03 uCi/Sa
2 JAE6D-1-AE-X J6H010301-3-DUP	3914.60g,in	ITA5634 08/18/06		38.6	100	42	1254	9	9/062
08/01/2006 12:16	AmtRec: 20	DML,500ML,LP,2X4LP	#Containers: 5			Scr:	Alpha: 2.35E-04 uCi/Sa	Beta: 1.	28E-03 uCi/Sa
<b>3 JAE6K-1-AC</b> J6H010301-4-SAMP	4002.50g,in	ITA5635 08/18/06		36,3	100	LH	1257	al	9106 K
08/01/2006 11:16	AmtRec: 20	DML,500ML,LP,2X4LP	#Containers: 5	***************************************		Scr:	Alpha: -9.85E-05 uCi/Sa	Beta: 1.	85E-03 uCi/Sa
<b>4 JAE6R-1-AC</b> J6H010301-5-SAMP	4001.30g,in	ITA5636 08/18/06		35.1	100	45	1258	9/9	106 R
08/01/2006 10:19	AmtRec: 20	OML,500ML,LP,2X4LP	#Containers: 5			Sor:	Alpha: 8.19E-04 uCi/Sa	Beta: 8.	30E-04 uCi/Sa
<b>5 JAE6T-1-AC</b> J6H010301-6-SAMP	4002.10g,in	ITA5637 08/18/06		34.1	100	L2	1442	ale	1062
08/01/2006 09:15	AmtRec: 26	0ML,500ML,LP,2X4LP	#Containers: 5			Scr:	Alpha: 6.71E-04 uCi/Sa	Beta: 1.	51E-04 uCi/Sa
6 JAE61-1-AC J6H010305-1-SAMP	4002.40g,in	ITA5638 08/18/06		36.0	100	4	1443	919	106 K
08/01/2006 09:57	AmtRec: 2	0ML,500MLP,LP,2X4LP	#Containers: 5			Scr:	Alpha: 4.44E-04 uCi/Sa	Beta: 1.	73E-03 u <b>Ci/Sa</b>
<b>7 JAE65-1-AA</b> J6H010306-1-SAMP	4002.30g,in	ITA5639 08/18/06		J. 25	100	L5	1444	9/0	106 a
08/01/2006 13:07	AmtRec: 2	0ML,500ML,2X4LP	#Containers: 4	***************************************		Scr:	Alpha: 4.54E-04 uCi/Sa	Beta: 2.	77E-03 uCi/Sa
STL Richland Key: In - Initial Amt, fi - Richland Wa. pd - Prep Dt, r - Re				Page 1	ISV	- Insufficient Volu	me for Analysis		VO Cnt: <b>7</b> SamplePrep v4.8.2

#### 8/23/2006 11:25:33 AM Sample Preparation/Analysis Balance Id:206113 384868, Pacific Northwest National Laboratory, BN I-129 Prp/SepRC5025 Pipet #: Pacific Northwest National Lab TB Gamma by LEPD 51 CLIENT: HANFORD Sep1 DT/Tm Tech: AnalyDueDate: 09/15/2006 Batch: 6215550 PM, Quote: HC, 57671 WATER pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: ,DillonM Initial Aliquot QC Tracer Count On | Off Work Order, Lot. Total Dish Ppt or Count Detector CR Analyst, Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Size Geometry Time Min (24hr) Circle Init/Date ld 8 JAE66-1-AA 4005.80q,in ITA5640 100 08/18/06 35.7 J6H010306-2-SAMP 08/01/2006 13:07 AmtRec: 20ML,500ML,2X4LP Scr: Alpha: 6.67E-04 uCi/Sa Beta: 4.39E-04 uCi/Sa #Containers: 4 9 JAGEM-1-AC 4008.10a.in ITA5641 100 08/18/06 J6H010305-2-SAMP 08/01/2006 11:07 AmtRec: 20ML,500MLP,LP,2X4LP Scr: #Containers: 5 Alpha: 2.17E-03 uCi/Sa Beta: -3.03E-04 uCi/Sa 10 JAK3P-1-AA-B 4000.20g,in ITA5642 100 08/18/06 36.4 J6H030000-550-BLK 08/01/2006 12:16 AmtRec: #Containers: 1 Scr: Alpha: Beta: 11 JAK3P-1-AC-C 4000.40a.in ISD0681 100 08/02/06 384 J6H030000-550-LCS ) KII 08/01/2006 12:16 #Containers: 1 Scr: Alpha: Beta: Comments: JAE6D-SAMP "Comments: Aliquots reduced due to insufficient provided sample volume. MD 8/23/06" All Clients for Batch: Pacific Northwest National Lab, HC, 57671 384868, Pacific Northwest National Laboratory JAE6D1AC-SAMP Constituent List: I-129 RDL:1.00E+00 pCi/L LCL: UCL: RPD: TAK3P1AA-BLK: I-129 RDL:1.00E+00 pCi/L LCL: UCL: RPD: TAK3P1AC-LCS: UCL:130 RPD:20 RDL:5 pCi/L LCL:70 I-129 JAE6D1AC-SAMP Calc Info: WO Cnt: 11 Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 ISV - Insufficient Volume for Analysis STI Richland Page 2

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Richland Wa.

Prep\_SamplePrep v4.8.24

8/23/2006 11:25:34 AM	•	ole Preparation/	Balance Id:206113					
	BN I-129 Prp/Sep TB Gamma by LE				Pip	oet #:		
AnalyDueDate: 09/15/2006	51 CLIENT: HAN				Sep1 DT/Tm T	ech:		
Batch: 6215550 pCi/L				Sep2 DT/Tm Tech:				
SEQ Batch, Test: None		2000 CORRECTOR CONTRACTOR CONTRAC	Prep Tech:				ı: ,DillonM	
Work Order, Lot, Total Initial Al Sample DateTime Amt/Unit Amt/U		Dish Ppt or Size Geomet	Count	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments	
Uncert Level (#s).: 2 Decay to SaD	: Y Blk Subt.: N	Sci.Not.: Y	ODRs: B					
Uncert Level (#s).: 2 Decay to SaD	: Y Blk Subt.: N	Sci.Not.: Y	ODRs: B					
Uncert Level (#s).: 2 Decay to SaD	: Y Blk Subt.: N	Sci.Not.: Y	ODRs: B					
		Appr	oved By			Date:		

Page 3

9/11/2006 4:36:50 PM

# ICOC Fraction Transfer/Status Report ByDate: 9/11/2005, 9/16/2006, Batch: '6215550', User: \*ALL Order By DateTimeAccepting

k Ord CurStat	us A	ccepting		Comments
CalcC	DillonM	8/23/2006 9:43	:23	
	wagarr	IsBatched	8/3/2006 1:40:44 PM	ICOC_RADCALC v4.8.24
	DillonM	InPrep	8/23/2006 9:43:23 AM	RICH-RC-5016 REVISION 6
	DillonM	Prep1C	8/23/2006 2:57:58 PM	RICH-RC-5016 REVISION 6
	HoganS	Prep1C	9/8/2006 1:32:24 PM	RICHRC5025 REV3
	DAWKINSO	InCnt1	9/8/2006 3:09:40 PM	RICH-RD-0007 REVISION 5
	BlackCL	CalcC	9/11/2006 9:47:26 AM	RICH-RD-0007 REVISION 5
	DillonM	8/23/2006 2:57	:58 PM	
	Hogan <b>S</b>	9/8/2006 1:32:2	24 PM	
	DAWKINSO	9/8/2006 3:09:4	40 PM	
	BlackCL	9/11/2006 9:47	:26	
		CalcC DillonM wagarr DillonM DillonM HoganS DAWKINSO BlackCL DillonM HoganS DAWKINSO	CalcC         DillonM         8/23/2006 9:43           wagarr         IsBatched           DillonM         InPrep           DillonM         Prep1C           HoganS         Prep1C           DAWKINSO         InCnt1           BlackCL         CalcC           DillonM         8/23/2006 2:57           HoganS         9/8/2006 1:32:2           DAWKINSO         9/8/2006 3:09:4	CalcC         DillonM         8/23/2006 9:43:23           wagarr         IsBatched         8/3/2006 1:40:44 PM           DillonM         InPrep         8/23/2006 9:43:23 AM           DillonM         Prep1C         8/23/2006 2:57:58 PM           HoganS         Prep1C         9/8/2006 1:32:24 PM           DAWKINSO         InCnt1         9/8/2006 3:09:40 PM           BlackCL         CalcC         9/11/2006 9:47:26 AM           DillonM         8/23/2006 2:57:58 PM           HoganS         9/8/2006 1:32:24 PM           DAWKINSO         9/8/2006 3:09:40 PM

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

8/17/2006 2:25:04 PM Sample Preparation/Analysis Balance Id:1120482733,206113,11204031 384868, Pacific Northwest National Laboratory, AW Gamma PrpRC5017 Pipet #: Pacific Northwest National Lab TA Gamma by HPGE AnalyDueDate: 09/15/2006 WD 497/ **5I CLIENT: HANFORD** Sep1 DT/Tm Tech: PM, Quote: HC, 57671 Batch: 6215556 WATER pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: DillonM Count On | Off CR Analyst Detector Comments: Work Order, Lot. Total Initial Aliquot QC Tracer Dish Ppt or Count Time Min ld (24hr) Circle Init/Date Amt/Unit Prep Date Size Geometry Sample DateTime Amt/Unit 00 100 1 JAE6W-1-AE 2502.20q.in J6H010303-1-SAMP Scr: Alpha: 9.87E-03 uCi/Sa 1.5E-01L Beta: 1.44E-02 uCi/Sa 5.0E-02L AmtRec: 20ML.8XLP #Containers: 9 07/26/2006 09:47 100 2 JAE6W-1-AH-X 2499.80q,in 11145 J6H010303-1-DUP AmtRec: 20ML.8XLP #Containers: 9 Scr: Alpha: 9.87E-03 uCi/Sa 1.5E-01L Beta: 1.44E-02 uCi/Sa 5.0E-02L 07/26/2006 09:47 3 JAE6X-1-AE 2499.80g,in 100 J6H010303-2-SAMP Scr: Alpha: 1.85E-03 uCi/Sa Beta: 2.60E-03 uCi/Sa 07/26/2006 10:22 AmtRec: 20ML.8XLP #Containers: 9 100 4 JAK4A-1-AA-B 2500.00a.in 1046 J6H030000-556-BLK Scr: Beta: Alpha: 07/26/2006 09:47 AmtRec: #Containers: 1 100 8/26/06 QCAG1272 5 JAK4A-1-AC-C 2501.70g,in 07/20/06,pd J6H030000-556-LCS 03/07/05,r Scr: Alpha: Beta: 07/26/2006 09:47 AmtRec: #Containers: 1 Comments: pHc2.0 m8 8/17/06 All Clients for Batch: 384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, HC, 57671 JAE6W1AE-SAMP Constituent List: RPD: RPD: Cs-134 RDL:1.50E+01 pCi/L LCL: UCL: UCL: Co-60 RDL:2.50E+01 pCi/L LCL: WO Cnt: 5 Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 ISV - Insufficient Volume for Analysis Page 1 STL Richland Prep\_SamplePrep v4.8.24 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Richland Wa.

2	17	120	ากล	2:25	-06	PM
U/	1 1	12	M	Z. Z.	.00	1 171

AnalyDueDate: 09/15/2006

#### Sample Preparation/Analysis

Balance Id:1120482733,206113,11204031

Pipet #: \_\_\_\_\_

AW Gamma PrpRC5017 TA Gamma by HPGE **5I CLIENT: HANFORD** 

Sep1 DT/Tm Tech:

Batch: 6215556

pCi/L

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,DillonM 

Work Orde Sample Da		11	nitial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Detection  Time Min Id	III	On   Off Circle	CR Analyst, Init/Date	Comments
Cs-137	RDL:1.50E+01	pCi/L	LCL:70	UCL:130	RPD:20	Cs-137DA	RDL:1.50E+01	pCi/L	LCL:70	UCL:130	RPD:20
Eu-152	RDL:5.00E+01	pCi/L	LCL:	UCL:	RPD:	Eu-154	RDL:5.00E+01	pCi/L	LCL:	UCL:	RPD:
Eu-155	RDL:5.00E+01	pCi/L	LCL:	UCL:	RPD:	K-40	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:
Sb-125	RDL:5.00E+01	pCi/L	LCL:	UCL:	RPD:						
TAK4A1AA-BI	LK:										
Co-60	RDL:2.50E+01	pCi/L	LCL:	UCL:	RPD:	Cs-134	RDL:1.50E+01	pCi/L	LCL:	UCL:	RPD:
Cs-137	RDL:1.50E+01	pCi/L	LCL:	UCL:	RPD:	Cs-137DA	RDL:1.50E+01	pCi/L	LCL:	UCL:	RPD:
Eu-152	RDL:5.00E+01	pCi/L	LCL:	UCL:	RPD:	Eu-154	RDL:5.00E+01	-	LCL:	UCL:	RPD:
Eu-155	RDL:5.00E+01	pCi/L	LCL:	UCL:	RPD:	K-40	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:
Sb-125	RDL:5.00E+01	pCi/L	LCL:	UCL:	RPD:						
JAK4A1AC-LO	CS:										
Cs-137	RDL:15	pCi/L	LCL:70	UCL:130	RPD:20	Cs-137DA	RDL:15	_	LCL:70	UCL:130	RPD:20
K-40	RDL:6	pCi/L	LCL:70	UCL:130	RPD:20	Ra-226	RDL:	• " '	LCL:70	UCL:130	RPD:20
RA-228	RDL:	pCi/L	LCL:70	UCL:130	RPD:20	RA-228DA	RDL:	pCi/L	LCL:70	UCL:130	RPD:20
U-238	RDL:	pCi/L	LCL:70	UCL:130	RPD:20						
JAE6W1AE-SA	AMP Calc Info:										
Uncert	t Level (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.Not	.: Y ODR	s: B				
JAK4A1AA-BI		_									
Uncert	t Level (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.Not	.: Y ODR	s: B				
JAK4A1AC-LO	CS:										
	Level (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.Not	.: Y ODR	s: B				
						Approved	Bv			Date:	

Approved By \_

STL Richland Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis Page 2

WO Cnt: 5 Prep\_SamplePrep v4.8.24 8/30/2006 11:24:09 AM

# ICOC Fraction Transfer/Status Report ByDate: 8/30/2005, 9/4/2006, Batch: '6215556', User: \*ALL Order By DateTimeAccepting

Batch Wor	k Ord CurStat	us	Accepting		Comments
3215556			AND COLUMN TO THE TAXABLE PROPERTY OF		and the second s
1C	CalcC	DillonM	8/17/2006 2:42:	36 PM	
SC		wagarr	IsBatched	8/3/2006 1:40:44 PM	ICOC_RADCALC v4.8.24
SC .		DillonM	Prep1C	8/17/2006 2:42:36 PM	RICH-RC-5017 REVISION 5
iC		ScottM	InPrep2	8/21/2006 6:27:04 AM	RICH-RC-5017 REVISION 4
C		ScottM	Prep2C	8/23/2006 8:31:43 AM	RICH-RC-5017 REVISION 4
C		BlackCL	InCnt1	8/23/2006 8:41:01 AM	RICH-RD-0007 REVISION 5
C		StringerR	CalcC	8/26/2006 11:49:49 AM	RICH-RD-0007 REVISION 5
С		ScottM	8/21/2006 6:27	04	
C		ScottM	8/23/2006 8:31:	43	
C		BlackCL	8/23/2006 8:41:	01	
IC .		StringerR	8/26/2006 11:4	9:49	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt:5 ICOCFractions v4.8.18

8/23/2006 8:47:22	AM		Sample Preparation/Analysis							Balance Id:206113					
384868, Pacific Nor Pacific Northwest Na	tional Lab	. various de	S7 Gross	s Alpha b	-	ng Am-241 cu	rve					229			
AnalyDueDate: 09	/15/2006 W	4971	51 CLIE	INAH :TV	FORD				Sep1 DT/Tm Tech:						
Batch: 6215552 SEQ Batch, Test: Non-	WATER	pCi/L			PM, Qu	iote: HC , 576	Sep	Sep2 DT/Tm Tech:							
										Prep	Tech: Di	IlonM \	COTT_		
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit		Tracer Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count ( (24hr)			Analyst, nit/Date	Comments:		
1 JAE53-1-AC		185.20g,in					1			/	1 1	,			
J6H010299-1-SAMP	2 3 5 21 20 10 W				1.5	30.0	50	) 10A	- /	815	8/28/6	160P			
07/26/2006 08:38		AmtRec: 20	ML,2XLP	#Conta	ainers: 3	,	A STATE OF THE STA	Scr:	Alpha:	-{.29E-04 uC	i/Sa	Beta: 1.0	3E-04 uCi/Sa		
2 JAE6W-1-AC	100m/5	99.40g,in			POLICE AND ADDRESS OF THE POLICE AND ADDRESS		No.			en e	Official				
J6H010303-1-SAMP						5a,5	WINT THE PARTY AND ADDRESS OF THE PARTY AND AD	108		***************************************					
07/26/2006 09:47		AmtRec: 20	ML,8XLP	#Conta	ainers: 9		**************************************	Scr:	Alpha: 9.87	E-03 uCi/Sa	1.5E-01L	Beta: 1.44E-0	2 uCi/Sa 5.0E-0		
3 JAE6X-1-AC		128.20g,in			NA COLUMNICA DE LA COLUMNICA DE		No.			4	ed Charles and State				
J6H010303-2-SAMP					BUU5000	<u> </u>	> <u> </u>	100		- Workston					
07/26/2006 10:22		AmtRec: 20	ML,8XLP	#Cont	ainers: 9		AT THE PERSON PROJECTIVE	Scr:	Alpha:	1.85E-03 uC	i/Sa	Beta: 2.6	0E-03 uCi/Sa		
4 JAE6X-1-AG-X		128.10g,in					near week				Mark Completion (Company)				
J6H010303-2-DUP						27.8	SCOOLEAN WHICH	(OD			**************************************	*			
07/26/2006 10:22		AmtRec: 20	ML,8XLP	#Cont	ainers: 9		official and processing of the control of the contr	Scr:	Alpha	1.85E-03 uC	i/Sa	Beta: 2.6	0E-03 uCi/Sa		
5 JAK31-1-AA-B		200.70g,in			ng n		and the second		/						
J6H030000-552-BLK	: F					6,7		10E	<u>U</u>	) 					
07/26/2006 10:22	1000000 1000000 1000000 1000000 1000000 1000000	AmtRec:		#Containers:	:1		ROBINITATION OF THE PROPERTY O	Scr:		Alpha:			Beta:		
6 JAK31-1-AC-C		202.00g,in	ASD39		. 1/		\ \ \ \ \	/	3 16						
J6H030000-552-LCS	T N [ ] T] W   N W		08/11/0 02/09/0		<u> </u>	0,6	····	10 F	5 19	22	P				
07/26/2006 10:22		AmtRec:		#Containers	: 1	4 May .		Scr:		Alpha:			Beta:		
STL Richland K	ey: In - Initial Amt, f	i - Final Amt, di - Dil eference Dt, ec-Enric				Page 1	IS\	V - Insufficient Vol	ume for A	nalysis			O Cnt: 6 SamplePrep v4.		

/23/2006 8:47:24 AM			San	nple Prepa	aration/	Balance Id:206113				
nolyDuoDoto: 00/45/2006		S	Z Gross Alpha 7 Gross Alpha 5I CLIENT: HA	a by GPC usi		curve		Pi Sep1 DT/Tm	pet #:	
nalyDueDate: 09/15/2006	~		J. Vmimiti. 11/1							
Batch: 6215552 SEQ Batch, Test: None	pCi/	L						Sep2 DT/Tm	Tech:	
DECEDATION, 100th 110110				I I REIIE!				Prep	Tech: ,DillonM	
Work Order, Lot, Total Sample DateTime Amt/Uni	15	l Aliquot nt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometr	Count	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
Comments: JAE53-SAMP "Co JAE6W-SAMP "Co JAE6X-SAMP "Co	omments: Aliquo	ts for JAE6W	reduced due to i F6X reduced du	nitial screen ac	tivity. MD 8	/23/06"				
Il Clients for Batch: 384868, Pacific Northwes	t National La	iboratory	Pacific	Northwest N	ational L	ab, HC , 576	71			
AE531AC-SAMP Constituent Li			TAT				Martin Ma		۵.	
ALPHA RDL:3 AK311AA-BLK: ALPHA RDL:3	<b>-</b>	CL:	UCL:	RPD:						
AK311AC-LCS: Am-241 RDL:	pCi/L I	LCL:70	UCL:130	RPD:20						
AE531AC-SAMP Calc Info:						000 - D				
Uncert Level (#s).: 2	Decay to S	SaDt: Y	Blk Subt.:	N SC1.N	Iot.: Y	ODRs: B				
Uncert Level (#s).: 2	Decay to S	SaDt: Y	Blk Subt.:	N Sci.N	Tot.: Y	ODRs: B				
Uncert Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.N	Tot.: Y	ODRs: B				
					Appr	oved By			Date:	
										•
STL Richland Key: In - Initial	Amt, fi - Final A	.mt, di - Dilut	ed Amt, s1 - Sep	1, s2 - Sep2	Page 2	IS	V - Insufficient V	olume for Analysis		WO Cnt: 6
-	Ot, r - Reference								Prep	_SamplePrep v4.8

8/29/2006 4:52:13 PM

# ICOC Fraction Transfer/Status Report ByDate: 8/29/2005, 9/3/2006, Batch: '6215552', User: \*ALL Order By DateTimeAccepting

Q Batch W	ork Ord CurStat	us Ad	ccepting		Comments
6215552		www.committee.committee.com			
4 <i>C</i>	CalcC	DillonM	8/23/2006 8:13	:08	
SC		wagarr	IsBatched	8/3/2006 1:40:44 PM	ICOC_RADCALC v4.8.24
SC		DillonM	InPrep	8/23/2006 8:13:08 AM	RICH-RC-5014 REVISION 6
SC		ScottM	InPrep2	8/23/2006 9:14:16 AM	RICH-RC-5014 REVISION 6
SC		DillonM	Prep1C	8/23/2006 2:58:33 PM	RICH-RC-5016 REVISION 6
SC		ScottM	Prep2C	8/24/2006 7:42:31 AM	RICH-RC-5014 REVISION 6
SC		BlackCL	InCnt1	8/24/2006 7:51:32 AM	RICH-RD-0003 REVISION 4
SC		DAWKINSO	CalcC	8/28/2006 10:04:27 PM	RICH-RD-0003 REVISION 4
4 <i>C</i>		ScottM	8/23/2006 9:14	:16	
4 <i>C</i>		DillonM	8/23/2006 2:58	:33 PM	
4 <i>C</i>		ScottM	8/24/2006 7:42	:31	
4 <i>C</i>		BlackCL	8/24/2006 7:51:	:32	
AC		DAWKINSO	8/28/2006 10:0	4:27	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt:6 ICOCFractions v4.8.18

#### 8/23/2006 8:47:24 AM Sample Preparation/Analysis Balance Id:206113 384868. Pacific Northwest National Laboratory . BC Gross Beta PrpRC5014 Pipet #: Pacific Northwest National Lab S8 Gross Beta by GPC using Sr/Y-90 curve Sep1 DT/Tm Tech: 51 CLIENT: HANFORD AnalyDueDate: 09/15/2006 🐠 49フ PM. Quote: HC . 57671 Batch: 6215554 WATER pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: DillonM Work Order, Lot, Initial Aliquot QC Tracer Count On I Off Total Dish Ppt or Count Detector CR Analyst. Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Size Geometry Time Min ld (24hr) Circle Init/Date 1 JAE53-1-AD 199.70q,in 0600 32C 1.5 78.0 J6H010299-1-SAMP 07/26/2006 08:38 AmtRec: 20ML,2XLP #Containers: 3 Scr: Alpha: -1.29E-04 uCi/Sa Beta: 1.03E-04 uCi/Sa 2 JAE53-1-AE-X 199.90q.in 32D 7415 J6H010299-1-DUP 07/26/2006 08:38 AmtRec: 20ML.2XLP #Containers: 3 Scr: Alpha: -1.29E-04 uCi/Sa Beta: 1.03E-04 uCi/Sa 3 JAE6W-1-AD 50.50q,in 20 ml 73.2 200 J6H010303-1-SAMP 07/26/2006 09:47 AmtRec: 20ML.8XLP Scr: Alpha: 9.87E-03 uCi/Sa 1.5E-01L Beta: 1.44E-02 uCi/Sa 5.0E-02L #Containers: 9 4 JAE6X-1-AD 200.40a.in 27A 1/28 J6H010303-2-SAMP 07/26/2006 10:22 AmtRec: 20ML.8XLP #Containers: 9 Scr: Alpha: 1.85E-03 uCi/Sa Beta: 2.60E-03 uCi/Sa 5 JAK36-1-AA-B 199.90g,in BOA 200 J6H030000-554-BLK 01 07/26/2006 08:38 AmtRec: #Containers: 1 Scr: Alpha: Beta: BESB2901 6 JAK36-1-AC-C 200.70a.in 200 326 08/11/06,pd J6H030000-554-LCS 0,4 #Containers: 1 Scr: Beta: 07/26/2006 08:38 AmtRec: Alpha: WO Cnt: 6 STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis

8/23/2006 8:47:26 AM			Sai	mple Prep	paration/	Analysis		Balance	e ld:206113			
			BC Gross Beta				Pipet #:					
AnalyDuoDato: 00/15/2006			S8 Gross Beta 5l CLIENT: H	=	ng Sr/Y-90	curve		Sep1 DT/Tm T				
AnalyDueDate: 09/15/2006 Batch: 6215554		Ci/L	OI OMIMITION					-				
SEQ Batch, Test: None	P	ICI/L						Sep2 DT/Tm T	ech:			
								Prep T	ech: ,DillonM			
Work Order, Lot, Total Sample DateTime Amt/Un		Initial Aliquot Amt/Unit	QC Tracer Prep Date		Ppt or Geomet	Count	Detector	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:		
Comments: JAE53-SAMP "Co JAE6W-SAMP "Co JAE6X-SAMP "Co	comments: Ali comments: Alp	quots for JAE6V ha aliquots for J	V reduced due to	initial screen a ue to weight sci	ctivity. MD 8	3/23/06"						
ll Clients for Batch: 384868, Pacific Northwes	t National	. Laboratory	Pacific	: Northwest	National I	ab, HC , 57	671					
AE531AD-SAMP Constituent Li	.st:	# WHEEL					<b>20</b> ,000 (10)	PERSONAL SECTION OF THE SECTION OF T				
BETA RDL:4 UAK361AA-BLK:	pCi/L	LCL:	UCL:	RPD:								
BETA RDL:4	pCi/L	LCL:	UCL:	RPD:								
Sr-90 RDL:	pCi/L	LCL:70	UCL:130	RPD:20								
AE531AD-SAMP Calc Info: Uncert Level (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.	Not.: Y	ODRs: B						
AK361AA-BLK: Uncert Level (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.	Not.: Y	ODRs: B						
AK361AC-LCS: Uncert Level (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.	Not.: Y	ODRs: B						
					Appr	coved By			Date:			
STL Richland Key: In - Initial	Amt, fi - Fin	al Amt, di - Dilu	ited Amt, s1 - Se	p1, s2 - Sep2	Page 2	IS	SV - Insufficient V	olume for Analysis		WO Cnt: 6		
Richland Wa. pd - Prep [	Ot, r - Referer	nce Dt, ec-Enric	hment Cell, ct-Co	ocktailed Added					Prep	_SamplePrep v4.8		

8/28/2006 8:32:04 AM

# ICOC Fraction Transfer/Status Report ByDate: 8/28/2005, 9/2/2006, Batch: '6215554', User: \*ALL Order By DateTimeAccepting

Q Batch We	ork Ord CurStat	us A	ccepting		Comments
6215554	***************************************			AND THE RESIDENCE OF THE PARTY	
AC	CalcC	DillonM	8/23/2006 8:13	:16	
SC		wagarr	IsBatched	8/3/2006 1:40:44 PM	ICOC_RADCALC v4.8.24
SC		DillonM	InPrep	8/23/2006 8:13:16 AM	RICH-RC-5014 REVISION 6
SC		ScottM	InPrep2	8/23/2006 9:14:23 AM	RICH-RC-5014 REVISION 6
SC		DillonM	Prep1C	8/23/2006 2:58:27 PM	RICH-RC-5016 REVISION 6
SC		ScottM	Prep2C	8/24/2006 7:41:18 AM	RICH-RC-5014 REVISION 6
SC		BlackCL	InCnt1	8/24/2006 7:50:39 AM	RICH-RD-0003 REVISION 4
SC		DAWKINSO	CalcC	8/24/2006 9:53:47 PM	RICH-RD-0003 REVISION 4
AC		ScottM	8/23/2006 9:14	:23	
AC		DillonM	8/23/2006 2:58	:27 PM	
AC		ScottM	8/24/2006 7:41	:18	
AC		BlackCL	8/24/2006 7:50	:39	
AC		DAWKINSO	8/24/2006 9:53	:47 PM	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

8/17/2006 10:52:54 AM		Sample Prepa	ration/Analysis			Balance Id:20	06113,11204031	33,206113
384868, Pacific Northwest National La Pacific Northwest National Lab	•	90 Prp/SepRC5006(507 85 by Nal and Sr-90 by		h		Pipet #:		
AnalyDueDate: 09/15/2006 🏽 🖊 🖯		ENT: HANFORD	, 0		-	o1 DT/Tm Tech:	-	3: 28局
Batch: 6215555 WATER SEQ Batch, Test: None	pCi/L	PM, Qu	ote: HC , 57671		Sep	2 DT/Tm Tech:	of squeri	
						Prep Tech: I	DillonM	DRM
Work Order, Lot, Total Sample DateTime Amt/Unit	Initial Aliquot		rish Ppt or lize Geometry	Count Time Min		ount On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 JAE6W-1-AF J6H010303-1-SAMP	501.60g,in SRTB1393 08/17/06,pc 06/21/06,r	N NEW ONL	1.5" 19.8	100	91	2059	8/28/0600	
	を使用され <del>のです。</del>	0,406			5 <sub>A</sub>	0848	9/8/0	o b L
	YTA16121	(		(	(35)	- 1101 1234	21810	
07/26/2006 09:47	EX:7/23/2007 AmtRec; 20ML,8XLP	#Containers: 9			5A	7E-03 uCi/Sa 1.5E-01	•	Ci/Sa 5.0E-02L
	500.60g,in SRTB1393			100			Sz 8/0 Ca 62	G/3a 5.0E-02L
2 JAE6W-1-AG-X 500 m   J6H010303-1-DUP	08/17/06,pc 06/21/06,r		20,3		3" 2	<i>O</i> 3 ( ,	of - M - m -	
MARINE I MAR	1 15 to Calenton Co.	0.845		A	Sb	0848	9/8/06	<b>}</b> _
	YTA16122			(3	5) —	1161	918100	
	Ex:7/23/2007		***************************************		58			
07/26/2006 09:47 3 JAE6X-1-AF	AmtRec: 20ML,8XLP 1000.70g,in SRTB1393	#Containers: 9		100		7E-03 uCi/Sa 1.5E-01		Ci/Sa 5.0E-02L
J6H010303-2-SAMP	08/17/06,pd		20.	100	9" 2	139	8/28/0600	
	06/21/06,r	0.8754			Cr	0848	9/8/0	(_ v
	YTA16123	<u> </u>		(	85)	→1024	4/8/06	, , , , , , , , , , , , , , , , , , ,
	Ex:7/23/2007				OA	132¢		76-*
07/26/2006 10:22	AmtRec: 20ML,8XLP	#Containers: 9	•			: 1.85E-03 uCi/Sa	Beta: 2.60E	-03 uCi/Sa
4 JAK39-1-AA-B	999.80g,in SRTB1393 08/17/06,pi	1 11000	008	100	3" 2	139	8/28/0000	
J6H030000-555-BLK	06/21/06,r	<u> </u>	<u> </u>		7	~ 611 G	- 1/1	
	770-00 VIA16124	7.876			<u> </u>	0848	9/8/0	
	YTA16124 Ex:7/23/2007	0.90/			- 5A	1154	4191	06 k
07/26/2006 09:47	AmtRec:	#Containers: 1			Scr:	Alpha:	Ве	eta:
STL Richland Key: In - Initial Amt,	fi - Final Amt, di - Diluted Am	t, s1 - Sep1, s2 - Sep2	Page 1	ISV - Insufficio	ent Volume for A	ınalysis	WO	Cnt: 4
i	Reference Dt, ec-Enrichment (							mplePrep v4.8.24

		Sa	mple Prepara	ation/Ana	ılysis		Balance	ld:206113,11	120403183,206113
			SepRC5006(5071 al and Sr-90 by 0		growth		Pip	et #:	The second secon
AnalyDueDate: 09/15/2006		51 CLIENT: H	=	_			Sep1 DT/Tm T	ech:	
Batch: 6215555 SEQ Batch, Test: None	pCi/L						Sep2 DT/Tm Te	ech:	
SEQ Batch, Test. None							Prep T	ech: ,DillonM	
Work Order, Lot, Total	Initial Aliquot	QC Tracer	Tracer Dis			Detector	Count On Of	f CR Anal	yst, Comments:
Sample DateTime Amt/Unit	Amt/Unit	Prep Date	Yield Siz	e Geom		ld	(24hr) Circle	Init/Dat	te
5 JAK39-1-AC-C J6H030000-555-LCS	1000.00g,in	SRSG1254 \ (C 08/17/06,pd \ C	96 (5"	00 )	100	A	2211	8/28/060	200
J6H030000-555-LCS		06/21/06,r L L		<u> </u>				_ ^ 4	<del></del>
		0.8	37			<u>(</u>	OA O	848 0	7/8/06 r
		6125 23/2007	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				$5\beta$	1154	96662
07/26/2006 09:47	AmtRe		iners: 1			Scr:	Alpha:	-	Beta:
All Clients for Batch: 384868, Pacific Northwest	: National Laborat	ory Pacific	northwest Nat	ional Lab,	HC , 57671				
384868, Pacific Northwest JAE6W1AF-SAMP Constituent Li:	st:		i milin — Lossi in sur a los as a mining an in sur a nad			pCi/L	I.CL: 70	UCL: 130	RPD:20
384868, Pacific Northwest  JAE6W1AF-SAMP Constituent Lis  Sr-85 RDL:	Mana Manana Mana		RPD:20	ional Lab, Sr-90	HC , 57671	pCi/L	LCL:70	UCL:130	RPD:20
384868, Pacific Northwest JAE6W1AF-SAMP Constituent Li:	st:	) UCL:105	i milin — Lossi in sur a los as a mining an in sur a nad			pCi/L	LCL:70	UCL:130 UCL:	RPD:20
384868, Pacific Northwest  JAE6W1AF-SAMP Constituent Li: Sr-85 RDL:  JAK391AA-BLK:	st: pCi/L LCL:20	UCL:105	RPD:20	Sr-90	RDL:2				
JAE6W1AF-SAMP Constituent Lisser-85 RDL:  JAK391AA-BLK: Sr-85 RDL:  JAK391AC-LCS: Sr-85 RDL:  JAE6W1AF-SAMP Calc Info: Uncert Level (#s).: 2	pCi/L LCL:20	UCL:105  UCL:105  UCL:105	RPD:20 RPD:20 RPD:20	Sr-90 Sr-90 Sr-90	RDL:2	pCi/L	LCL:	UCL:	RPD:
JAE6W1AF-SAMP Constituent Li: Sr-85 RDL:  JAK391AA-BLK: Sr-85 RDL:  JAK391AC-LCS: Sr-85 RDL:  JAE6W1AF-SAMP Calc Info: Uncert Level (#s):: 2  JAK391AA-BLK: Uncert Level (#s):: 2	pCi/L LCL:20 pCi/L LCL:20	UCL:105  UCL:105  UCL:105  VCL:105	RPD:20  RPD:20  RPD:20  RPD:20	Sr-90 Sr-90 Sr-90	RDL:2 RDL:2 RDL:2	pCi/L	LCL:	UCL:	RPD:
JAE6W1AF-SAMP Constituent Li: Sr-85 RDL:  JAK391AA-BLK: Sr-85 RDL:  JAK391AC-LCS: Sr-85 RDL:  JAE6W1AF-SAMP Calc Info: Uncert Level (#s).: 2  JAK391AA-BLK:	pCi/L LCL:20 pCi/L LCL:20 pCi/L LCL:20 pCi/L LCL:20	UCL:105  UCL:105  UCL:105  UCL:105  Y Blk Subt.	RPD:20  RPD:20  RPD:20  : N Sci.Not  : N Sci.Not	Sr-90 Sr-90 Sr-90 .: Y OL	RDL:2 RDL:2 RDL:2	pCi/L	LCL:	UCL:	RPD:
JAE6W1AF-SAMP Constituent Lissens Sr-85 RDL:  JAK391AA-BLK: Sr-85 RDL:  JAK391AC-LCS: Sr-85 RDL:  JAE6W1AF-SAMP Calc Info: Uncert Level (#s).: 2  JAK391AA-BLK: Uncert Level (#s).: 2  JAK391AC-LCS:	pCi/L LCL:20 pCi/L LCL:20 pCi/L LCL:20 Decay to SaDt: Decay to SaDt:	UCL:105  UCL:105  UCL:105  UCL:105  Y Blk Subt.	RPD:20  RPD:20  RPD:20  : N Sci.Not  : N Sci.Not	Sr-90 Sr-90 Sr-90 .: Y OL	RDL:2  RDL:2  RDL:2  ORS: B	pCi/L	LCL:	UCL:130	RPD:
JAE6W1AF-SAMP Constituent Lissr-85 RDL:  JAK391AA-BLK: Sr-85 RDL:  JAK391AC-LCS: Sr-85 RDL:  JAE6W1AF-SAMP Calc Info: Uncert Level (#s).: 2  JAK391AA-BLK: Uncert Level (#s).: 2  JAK391AC-LCS:	pCi/L LCL:20 pCi/L LCL:20 pCi/L LCL:20 Decay to SaDt: Decay to SaDt:	UCL:105  UCL:105  UCL:105  UCL:105  Y Blk Subt.	RPD:20  RPD:20  RPD:20  : N Sci.Not  : N Sci.Not	Sr-90 Sr-90 Sr-90 .: Y OL	RDL:2  RDL:2  RDL:2  ORS: B  ORS: B	pCi/L	LCL:	UCL:130	RPD: RPD:20

9/11/2006 4:03:18 PM

## ICOC Fraction Transfer/Status Report ByDate: 9/11/2005, 9/16/2006, Batch: '6215555', User: \*ALL Order By DateTimeAccepting

Q Batch Wo	rk Ord CurStat	us A	ccepting		Comments
3215555				WOMEN TO THE TRANSPORT OF THE TRANSPORT	
4C	CalcC	DillonM	8/17/2006 10:3	9:05	
SC		wagarr	IsBatched	8/3/2006 1:40:44 PM	ICOC_RADCALC v4.8.24
SC		DillonM	InPrep	8/17/2006 10:39:05 AM	RICH-RC-5016 REVISION 6
SC		DillonM	Prep1C	8/17/2006 10:56:48 AM	RICH-RC-5016 REVISION 6
SC		ManisD	Sep1C	8/28/2006 5:17:40 PM	RICH-RC-5006 REVISION 6
SC		DAWKINSO	InCnt1	8/28/2006 5:51:06 PM	RICH-RD-0007 REVISION 5
SC		DAWKINSO	Cnt1C	8/28/2006 9:52:43 PM	RICH-RD-0007 REVISION 5
SC .		ManisD	Sep2C	9/7/2006 5:28:00 PM	RICH-RC-5071 REVISION 4
SC		DAWKINSO	InCnt2	9/7/2006 6:01:47 PM	RICH-RD-0003 REVISION 4
SC		StringerR	CalcC	9/9/2006 2:16:51 PM	RICH-RD-0003 REVISION 4
AC .		DillonM	8/17/2006 10:5	6:48	
IC		ManisD	8/28/2006 5:17	:40 PM	
AC		DAWKINSO	8/28/2006 5:51	:06 PM	
AC		DAWKINSO	8/28/2006 9:52	:43 PM	
4 <i>C</i>		ManisD	9/7/2006 5:28:0	00 PM	
4 <i>C</i>		DAWKINSO	9/7/2006 6:01:4	17 PM	
4C		StringerR	9/9/2006 2:16:5	51 PM	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

#### 8/23/2006 1:04:30 PM Sample Preparation/Analysis Balance Id:206113 384868, Pacific Northwest National Laboratory, FP Tc-99 Prp/SepRC5065 Pipet #: Pacific Northwest National Lab S5 Technetium-99 by Liquid Scint AnalyDueDate: 09/15/2006 W 04 9 7/ Sep1 DT/Tm Tech: 5I CLIENT: HANFORD Batch: 6215539 WATER PM, Quote: HC, 57671 pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: .DillonM Work Order, Lot. Total Amt Total Initial Aliquot Adj Aliq Amt QC Tracer Count On | Off Count Detector CR Analyst, Comments: Acidified/Unit Sample Date /Unit Amt/Unit (Un-Acidified) Prep Date Time Min ld (24hr) Circle Init/Date 1 JAE5J-1-AC 125.50a.in 125.50a 60 J6H010297-1-SAMP 08/01/2006 11:52 AmtRec: 20ML,500ML,LP #Containers: 3 Scr Alpha: 3.45E-04 uCi/Sa Beta: -2.98E-05 uCi/Sa 2 JAE5J-1-AD-X 60 126.80q,in 126.80a J6H010297-1-DUP 08/01/2006 11:52 AmtRec: 20ML.500ML.LP #Containers: 3 Scr: Alpha: 3.45E-04 uCi/Sa Beta: -2.98E-05 uCi/Sa 3 JAE59-1-AC 125.30q,in 125.30g 60 J6H010301-1-SAMP AmtRec: 20ML,500ML,LP #Containers: 3 Scr: Alpha: 2.82E-04 uCi/Sa Beta: 9.53E-05 uCi/Sa 08/01/2006 09:31 60 4 JAE6C-1-AC 125.00q,in 125.00g J6H010301-2-SAMP 08/01/2006 10:56 AmtRec: 20ML.500ML,LP #Containers: 3 Scr: Alpha: 1.01E-04 uCi/Sa Beta: 1.66E-04 uCi/Sa 60 5 JAE6D-1-AD 126.40q,in 126.40g J6H010301-3-SAMP 08/01/2006 12:16 AmtRec: 20ML.500ML.LP.2X4LP #Containers: 5 Scr: Alpha: 2.35E-04 uCi/Sa Beta: 1.28E-03 uCi/Sa 60 6 JAE6K-1-AD 124.80a.in 124.80a J6H010301-4-SAMP 08/01/2006 11:16 AmtRec: 20ML.500ML.LP.2X4LP #Containers: 5 Scr: Alpha: -9.85E-05 uCi/Sa Beta: 1.85E-03 uCi/Sa 7 JAE6R-1-AD 124.70g,in 60 124.70g J6H010301-5-SAMP Beta: 8.30E-04 uCi/Sa 08/01/2006 10:19 AmtRec: 20ML.500ML.LP.2X4LP #Containers: 5 Scr: Alpha: 8.19E-04 uCi/Sa

Page 1

ISV - Insufficient Volume for Analysis

STL Richland

Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

WO Cnt: 7

Prep SamplePrep v4.8.24

#### 8/23/2006 1:04:32 PM Sample Preparation/Analysis Balance Id:206113 384868, Pacific Northwest National Laboratory, FP Tc-99 Prp/SepRC5065 Pipet #: Pacific Northwest National Lab S5 Technetium-99 by Liquid Scint 51 CLIENT: HANFORD Sep1 DT/Tm Tech: AnalyDueDate: 09/15/2006 PM, Quote: HC, 57671 Batch: 6215539 WATER pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: .DillonM Work Order, Lot, Total Initial Aliquot Adi Aliq Amt QC Tracer Count Detector Count On | Off CR Analyst. Comments: Total Amt Sample Date /Unit Acidified/Unit Amt/Unit (Un-Acidified) Prep Date Time Min ld (24hr) Circle Init/Date 60 8 JAE6T-1-AD 125.40g,in 125.40g J6H010301-6-SAMP Scr: Beta: 1.51E-04 uCi/Sa 08/01/2006 09:15 AmtRec: 20ML,500ML,LP,2X4LP #Containers: 5 Alpha: 6.71E-04 uCi/Sa 9 JAE61-1-AD 126.60q 60 126.60q.in J6H010305-1-SAMP Beta: 1.73E-03 uCi/Sa 08/01/2006 09:57 AmtRec: 20ML.500MLP.LP.2X4LP #Containers: 5 Scr: Alpha: 4.44E-04 uCi/Sa 125.60g 60 10JAE67-1-AC 125.60g,in J6H010307-1-SAMP Alpha: 1.76E-04 uCi/Sa Beta: 1.84E-04 uCi/Sa AmtRec: 20ML.500ML,LP #Containers: 3 Scr: 124.70g TCSG1672 60 11 JAE67-1-AD-S 124.70q,in 08/03/06,pd J6H010307-1-MS 01/10/06,r 08/01/2006 10:37 AmtRec: 20ML,500ML,LP #Containers: 3 Scr: Alpha: 1.76E-04 uCi/Sa Beta: 1.84E-04 uCi/Sa 12JAE68-1-AA 127.30g,in 127.30g 60 J6H010307-2-SAMP AmtRec: 20ML,500ML #Containers: 2 Scr: Alpha: 6.72E-05 uCi/Sa Beta: -9.89E-06 uCi/Sa 08/01/2006 13:07 13JAGEM-1-AD 125.80g,in 125.80g 60 J6H010305-2-SAMP Beta: -3,03E-04 uCi/Sa 08/01/2006 11:07 AmtRec: 20ML.500MLP.LP.2X4LP #Containers: 5 Scr: Alpha: 2.17E-03 uCi/Sa 14 JAK2Q-1-AA-B 127,10g,in 127.10a 60 J6H030000-539-BLK Beta: Scr: Alpha: AmtRec: #Containers: 1 08/01/2006 11:52 WO Cnt: 14 ISV - Insufficient Volume for Analysis

Page 2

Prep SamplePrep v4.8.24

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

STL Richland

Richland Wa.

8/23/2006 1:04:33 PM

### Sample Preparation/Analysis

FP Tc-99 Prp/SepRC5065 S5 Technetium-99 by Liquid Scint

1	-
AnalyDueDate: 09/15/2006	51 CLIENT: HANFORD

Balance Id:206113

Pipet	#•	
Liber	π.	

Prep Tech: ,DillonM

Sep1 DT/Tm Tech:

Batch: 6215539 pCi/L Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15 JAK2Q-1-AC-C			125.00g,in	125.00g	TCSE1995	60				
J6H030000-539-LCS					08/03/06,pd 01/10/06,r					
	8   8     Xi   28						~~			

08/01/2006 11:52

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

16JAK2Q-1-AD-BN

J6H030000-539-IBLK



AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

17JAK2Q-1-AE-BN

J6H030000-539-IBLK



08/01/2006 11:52

AmtRec:

LCL:70

LCL:

LCL:70

#Containers: 1

Scr:

Alpha:

Beta:

Comments: JAE6D-SAMP ""

9HC2,0 mg 8/23/06

|--|

384868, Pacific Northwest National Laboratory

Pacific Northwest National Lab, HC , 57671

RPD:20

RPD:

RPD:

RPD:

RPD:20

JAE5J1AC-SAMP Constituent List: pCi/L Tc-99 RDL:15

JAE671AD-MS:

JAK2Q1AA-BLK:

RDL:15 Tc-99

JAK2Q1AC-LCS: Tc-99 RDL:15 pCi/L

JAK2Q1AD-IBLK: Tc-99 RDL:15 JAK2Q1AE-IBLK:

JAE5J1AC-SAMP Calc Info:

RDL:15

pCi/L pCi/L

pCi/L

LCL: UCL:

LCL: UCL:

UCL:130

UCL:

UCL:130

Page 3

ISV - Insufficient Volume for Analysis

WO Cnt: 17 Prep\_SamplePrep v4.8.24

STL Richland Richland Wa.

Tc-99

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

<b></b>			The control of the co	The second secon				
8/23/2006 1:04:34 PM		Sample	Preparation/Ana	alysis		Balance	ld:	
		FP Tc-99 Prp/SepRC S5 Technetium-99 by				Pipe	t #:	4
AnalyDueDate: 09/15/2006		5I CLIENT: HANFOF	RD			Sep1 DT/Tm Ted	ch:	
Batch: 6215539 SEQ Batch, Test: None	pCi/L	Annual Control of the	The second secon			Sep2 DT/Tm Ted	ch:	
SEQ Baton, Test. None						Prep Tec	ch:	
Work Order, Lot, Sample Date /Unit	Total I Acidified/Unit	Initial Aliquot	11	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
Uncert Level (#s).: 2  JAE671AD-MS: Uncert Level (#s).: 2  JAK2Q1AA-BLK: Uncert Level (#s).: 2	Decay to SaDt: Y Decay to SaDt: Y Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y O	DRs: B				
JAK2Q1AC-LCS: Uncert Level (#s).: 2	Decay to SaDt: Y			ORs: B				
JAK2Q1AD-IBLK: Uncert Level (#s).: 2 JAK2Q1AE-IBLK:	Decay to SaDt: Y			DRs: B				

Sci.Not.: Y

Page 4

ODRs: B

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N

8/29/2006 4:36:51 PM

## ICOC Fraction Transfer/Status Report ByDate: 8/29/2005, 9/3/2006, Batch: '6215539', User: \*ALL Order By DateTimeAccepting

Q Batch Work Ord	CurStati	us A	ccepting		Comments
6215539				A CONTRACTOR OF THE PROPERTY O	
AC C	CalcC	DillonM	8/23/2006 12:1	8:00	
SC		wagarr	IsBatched	8/3/2006 1:40:44 PM	ICOC_RADCALC v4.8.24
SC		DillonM	InPrep	8/23/2006 12:18:00 PM	RICH-RC-5016 REVISION 6
SC .		DillonM	Prep1C	8/23/2006 2:57:32 PM	RICH-RC-5016 REVISION 6
SC .		AndersonE	Sep1C	8/25/2006 11:51:04 AM	RICH-RC-5065 REV5
SC .		StringerR	InCnt1	8/25/2006 12:05:35 PM	RICH-RD-0001 REVISION 3
SC .		StringerR	CalcC	8/26/2006 2:31:49 PM	RICH-RD-0001 REVISION 3
AC		DillonM	8/23/2006 2:57	:32 PM	
AC		AndersonE	8/25/2006 11:5	1:04	
4 <i>C</i>		StringerR	8/25/2006 12:0	5:35	
1C		StringerR	8/26/2006 2:31	:49 PM	
AC		StringerH	8/20/2006 2:31	.49 PM	

Page 1

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt:5 ICOCFractions v4.8.18

/3/2006 1:39:37 PM 84868, Pacific Northy acific Northwest NationallyDueDate: 09/1	west National Labonal Lab	S6	Sample Pi R H-3 Prp/SepRC5007 Tritium by Liquid Sc I CLIENT: HANFORD	cint	naiysis	Balance Id:  Pipet #:  Sep1 DT/Tm Tech:			
	WATER	pCi/L		M, Quote: HC ,			p2 DT/Tm Tech: Prep Tech:		
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit		Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:	
<b>JAE5J-1-AA</b> 5H010297-1-SAMP									
		AmtRec: 20ML,50	500ML,LP #Containers:	.: 3		Scr:	Alpha:	Beta:	
J <b>AE53-1-AA</b> 6H010299-1-SAMP									
		AmtRec: 20ML,22	2XLP #Containers: 3	į		Scr:	Alpha:	Beta:	
: <b>JAE59-1-AA</b> 6H010301-1-SAMP 		AmtRec: 20ML,50	500ML,LP #Containers:	x: 3		Scr:	Alpha:	Beta:	
JAE6C-1-AA 6H010301-2-SAMP		AmtDoo: 20ML F	TOOLAL I.D. #Containers	0		Scr:	Alpha	Beta:	
8/01/2006 10:56  JAE6D-1-AA  6H010301-3-SAMP		AmtRec: 20ML,50	500ML,LP #Containers:	.3		Ou.	Alpha:	Deta.	
98/01/2006 12:16		AmtRec: 20ML,5	500ML,LP,2X4LP #Contain	ners: 5		Scr:	Alpha:	Beta:	
5 <b>JAE6K-1-AA</b> 6H010301-4-SAMP						^ :-		Date:	
98/01/2006 11:16 JAE6R-1-AE 6H010301-5-SAMP		AmtRec: 20ML,5	500ML,LP,2X4LP #Contain	iers: 5		Scr:	Alpha:	Beta:	
08/01/2006 10:19		AmtRec: 20ML,5	500ML,LP,2X4LP #Contain	ners: 5	***************************************	Scr:	Alpha:	Beta:	
•		fi - Final Amt, di - Diluted - Reference Dt, ec-Enrichme			ISV ·	- Insufficient Volume for A	Analysis	WO Cnt: 7	

/3/2006 1:39:37 PM			Sample Pr	eparation/A	nalysis	Manifest	Balance Id:	A COMMAND AND A COMMAND A COMMAND AND A COMMAND AND A COMMAND AND A COMMAND AND A COMM	
84868, Pacific Northwacific Northwacific Northwest Natio		=	Prp/SepRC5007 ium by Liquid Sci	int			Pipet #:		
nalyDueDate: 09/1	5/2006		ENT: HANFORD			Se	p1 DT/Tm Tech:		
	WATER	pCi/L	PM	, Quote: HC ,	57671	Sep2 DT/Tm Tech:			
EQ Batch, Test: None							Prep Tech:		
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:	
JAE6T-1-AA									
H010301-6-SAMP									
3/01/2006 09:15		AmtRec: 20ML,500ML,	LP,2X4LP #Containe	ers: 5		Scr:	Alpha:	Beta:	
JAE6W-1-AA	Worm	Sample							
H010303-1-SAMP 	mulal	Courtor	7						
7/26/2006 09:47		AmtRec: 20ML,8XLP	#Containers: 9			Scr:	Alpha:	Beta:	
JAE6X-1-AA									
H010303-2-SAMP	:								
7/26/2006 10:22	20000000000000000000000000000000000000	AmtRec: 20ML,8XLP	#Containers: 9			Scr:	Alpha:	Beta:	
JAE61-1-AA									
6H010305-1-SAMP	ii 8 II 8 8 818								
B/01/2006 09:57	TODORNO	AmtRec: 20ML,500ML	P,LP,2X4LP #Contain	ers: 5		Scr:	Alpha:	Beta:	
JAE61-1-AE-X									
6H010305-1-DUP									
<b> </b>    <b>                                    </b>	CONTRACTOR OF THE PROPERTY OF	AmtRec: 20ML,500ML	P,LP,2X4LP #Contain	ners: 5		Scr:	Alpha:	Beta:	
JAE67-1-AA									
6H010307-1-SAMP						· · · · · · · · · · · · · · · · · · ·			
<b>-                                  </b> 8/01/2006 10:37		AmtRec: 20ML,500ML	LP #Containers:	3		Scr:	Alpha:	Beta:	
JAGEM-1-AA	No.								
6H010305-2-SAMP	11 S 11 B B B 18								
8/01/2006 11:07		AmtRec: 20ML,500ML	P,LP,2X4LP #Contain	ners: 5	-	Scr:	Alpha:	Beta:	
STL Richland Key	: In - Initial Amt. fi - F	inal Amt, di - Diluted Amt	, s1 - Sep1, s2 - Sep	2 Page 2	ISV -	· Insufficient Volume for	Analysis	WO Cnt: 14	
· · · · · · · · · · · · · · · · · · ·		rence Dt, ec-Enrichment C						ICOC v4.8	

8/3/2006 1:39:38 PM		· · · · · · · · · · · · · · · · · · ·	Sample P	reparation/A	Balance Id:			
			3 Prp/SepRC5007		Pipet #:			
	,		itium by Liquid Sc .IENT: HANFORD	int		Sor	o1 DT/Tm Tech:	
AnalyDueDate: 09/	15/2006		JENT: HANFORD					
Batch: 6215544 SEQ Batch, Test: None		pCi/L				Sep	o2 DT/Tm Tech:	
SEQ Datch, Test. None	÷		1 1 1 1 1				Prep Tech:	
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15JAK2V-1-AA-B		4	11				8	
J6H030000-544-BLK								
08/01/2006 09:57		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
16JAK2V-1-AC-C								
J6H030000-544-LCS	s / 1 Raimin min							
08/01/2006 09:57		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
17 JAK2V-1-AD-BX								
J6H030000-544-MBLK	F 12 1 C 193 Mill							
08/01/2006 09:57		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
18JAK2V-1-AE-CM								
J6H030000-544-MLCS				• · · · · • · · · · · · · · · · · · · ·				************
08/01/2006 09:57		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
19JAK2V-1-AF-BN								
J6H030000-544-IBLK	■					*****************		
08/01/2006 09:57		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
20 JAK2V-1-AG-BN								
J6H030000-544-IBLK	E DI I 1180 \$ 815							
08/01/2006 09:57		AmtRec:	#Containers: 1	· · · · · · · · · · · · · · · · · · ·	****	Scr:	Alpha:	Beta:
21 JAK2V-1-AH-BN								
J6H030000-544-IBLK								

Page 3

08/01/2006 09:57

AmtRec:

#Containers: 1

Scr:

Alpha:

Beta:

STL Richland Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ISV - Insufficient Volume for Analysis

WO Cnt: 21

ICOC v4.8.24

8/3	/2006	1:39:	40	PМ
$\mathbf{U} \cup \mathbf{U}$	/ Z U U U	1.00		1 171

## Sample Preparation/Analysis

AR H-3 Prp/SepRC5007 S6 Tritium by Liquid Scint 5I CLIENT: HANFORD

Balance Id:		
Dinat #		

ICOC v4.8.24

Pipet #: \_\_\_\_\_

AnalyDueDate: 09/15/2006

pCi/L

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Sep1 DT/Tm Tech: Sep2 DT/Tm Tech:

Batch: 6215544 SEQ Batch, Test: None

Prep Tech:

Work Order, Lot,	Total	Initial Aliquot	QC Tracer	Count	Detector	Count On   Off	CR Analyst,	Comments:		
Sample DateTime	Amt/Unit	Amt/Unit	Prep Date	Time Min	l ia i	(24hr) Circle	Init/Date	1		

#### Comments:

Richland Wa.

384868,	Pacific Northwes	t National 1	Laboratory	Pacific	Northwest National L	ab, HC , 57671	
AE5J1AA-SAM	P Constituent Li	st:					
H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20		
AK2V1AA-BLK	:						
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:		
AK2V1AC-LCS	:						
H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20		
AK2V1AD-MBL	K:						
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:		
AK2V1AE-MLC	S:						
H-3	RDL:400	pCi/L	LCL:70	UCL:130	RPD:20		
AK2V1AF-IBL	K:						
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:		
AK2V1AG-IBL	K:						
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:		
AK2V1AH-IBL	K:						
H-3	RDL:400	pCi/L	LCL:	UCL:	RPD:		
AE5J1AA-SAM	P Calc Info:						
	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	
AK2V1AA-BLK							
	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	
AK2V1AC-LCS		-					
Uncert	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	
AK2V1AD-MBL	K:	-					
Uncert	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	
AK2V1AE-MLC	S:						
Uncert	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	
AK2V1AF-IBL	K:						
Uncert	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	
AK2V1AG-IBL	K:						
Uncert	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	
AK2V1AH-IBL	K:						
Uncert	Level (#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sci.Not.: Y	ODRs: B	

8/3/2006 1:39:40 PM			Sample Pre		Balance Id:			
			3 Prp/SepRC5007		Pipet #:			
malyDuaDatas 00/45	lanne		itium by Liquid Scir .IENT: HANFORD	it	Sen1	DT/Tm Tech:		
nalyDueDate: 09/15 atch: 6215544	/2006	pCi/L	JEHT. HART OND					
EQ Batch, Test: None		pci/L				Sep2	DT/Tm Tech:	
							Prep Tech:	
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Tirne Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
				Appro	ved By		Date: _	
STL Richland Key: I	n - Initial Amt, fi - F	inal Amt, di - Diluted Am	it, s1 - Sep1, s2 - Sep2	Page 5	ISV -	Insufficient Volume for Ana	lysis	WO Cnt: <b>21</b> ICOC v4.8

8/21/2006 10:42:00 AM

# ICOC Fraction Transfer/Status Report ByDate: 8/21/2005, 8/26/2006, Batch: '6215544', User: \*ALL Order By DateTimeAccepting

Q Batch Wo	rk Ord CurStat	tus Ad	ccepting		Comments
6215544					
4 <i>C</i>	CalcC	McDowellD	8/16/2006 10:2	3:19	
SC		wagarr	IsBatched	8/3/2006 1:40:44 PM	ICOC_RADCALC v4.8.24
SC .		McDowellD	InSep1	8/16/2006 10:23:19 AM	RICH-RC-5007 REVISION 6
SC .		McDowellD	Sep1C	8/16/2006 3:45:49 PM	RICH-RC-5007 REVISION 6
SC		DAWKINSO	InCnt1	8/16/2006 4:43:02 PM	RICH-RD-0001 REVISION 3
SC .		StringerR	CalcC	8/18/2006 12:32:07 PM	RICH-RD-0001 REVISION 3
IC		McDowellD	8/16/2006 3:45	:49 PM	
AC .		DAWKINSO	8/16/2006 4:43	:02 PM	
1C		StringerR	8/18/2006 12:3	2:07	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt: 4 ICOCFractions v4.8.18



# \*\*\* RE-ANALYSIS REQUEST \*\*\* DUE DATE ANALYSIS REQUEST \*\*\*

CUSTOMER PGW	
ANALYSIS UNA	
MATRIX WOULL	3
LOT NUMBER 7662100132	
SAMPLE DELIVERY GROUP WOL	1971
OLD BATCH NUMBER 675518	
NEW BATCH NUMBER (0737750)	
LAB SAMPLE ID REASON FOR RE	QUEST & ANALYSIS COMMENTS
	V 01 CPOL
1) QQ (   Dlaw	l With
3)	
4)	<u> </u>
5)	
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14)	
15)	
16)	
17) 18)	
19)	***************************************
20)	
LAB OCID Assigned with new h	patch

#### 8/28/2006 8:22:22 AM Sample Preparation/Analysis Balance Id:206113 384868, Pacific Northwest National Laboratory, DH UNat Laser PrpRC5015 Pipet #: Pacific Northwest National Lab SS Total Uranium by KPA Sep1 DT/Tm Tech: 5I CLIENT: HANFORD AnalyDueDate: 09/08/2006 ug/L PM. Quote: HC . 57671 Batch: 6237250 WATER Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: ,DillonM ott Initial Aliquot QC Tracer Count On | Off Work Order, Lot, Total Count Detector CR Analyst. Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Time Min ld (24hr) Circle Init/Date 1011 1 H91MC-2-AA 25.00g,in J6G260132-1-SAMP 1000m1 Beta: 2.39E-05 uCi/Sa AmtRec: 20ML.500MLP #Containers: 2 Scr: Alpha: 6.42E-05 uCi/Sa 07/25/2006 10:01 2 H91MC-2-AC-X 25.10q,in J6G260132-1-DUP #Containers: 2 Beta: 2.39E-05 uCi/Sa 07/25/2006 10:01 AmtRec: 20ML.500MLP Scr Alpha: 6.42E-05 uCi/Sa 3 H91MR-2-AA 25.10q,in J6G260132-2-SAMP Beta: 3.76E-04 uCi/Sa 1.2E-01L AmtRec: 20ML.500MLP #Containers: 2 Scr: Alpha: -8.63E-05 uCi/Sa 07/25/2006 11:20 UNSF3271 4 H91MR-2-AC-S 25.30a.in 07/27/06,pd J6G260132-2-MS AmtRec: 20ML,500MLP #Containers: 2 Scr: Alpha: -8.63E-05 uCi/Sa Beta: 3.76E-04 uCi/Sa 1.2E-01L 07/25/2006 11:20 5 JAC4R-2-AA 24.80g,in J6G310193-1-SAMP Scr: Alpha: 2.49E-05 uCi/Sa Beta: 5.07E-05 uCi/Sa 07/31/2006 12:01 AmtRec: 20ML.500MLP #Containers: 2 6 JAC4T-2-AA 25.10a.in J6G310193-2-SAMP Beta: 4.57E-04 uCi/Sa 9.8E-02L AmtRec: 20ML,500MLP #Containers: 2 Scr: Alpha: -1.46E-04 uCi/Sa 07/31/2006 13:25 7 JAE65-2-AC 25.50g,in J6H010306-1-SAMP Alpha: 4.54E-04 uCi/Sa Beta: 2.77E-03 uCi/Sa 08/01/2006 13:07 AmtRec: 20ML,500ML,2X4LP #Containers: 4 Scr: WO Cnt: 7 Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 ISV - Insufficient Volume for Analysis Page 1 STL Richland Prep\_SamplePrep v4.8.24 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Richland Wa.

#### Sample Preparation/Analysis 8/28/2006 8:22:24 AM Balance Id:206113 247 384868, Pacific Northwest National Laboratory, DH UNat Laser PrpRC5015 Pipet #: Pacific Northwest National Lab SS Total Uranium by KPA Sep1 DT/Tm Tech: **5I CLIENT: HANFORD** AnalyDueDate: 09/08/2006 PM. Quote: HC , 57671 Batch: 6237250 Sep2 DT/Tm Tech: WATER ug/L SEQ Batch, Test: None Prep Tech: ,DillonM Count On | Off CR Analyst, QC Tracer Count Detector Comments: Work Order, Lot. Total Initial Aliquot Init/Date Amt/Unit Prep Date Time Min ld (24hr) Circle Amt/Unit Sample DateTime 8 JAE66-2-AC Flush Usl 25.40g,in J6H010306-2-SAMP 10.0m1 Scr: Beta: 4.39E-04 uCi/Sa AmtRec: 20ML,500ML,2X4LP #Containers: 4 Alpha: 6.67E-04 uCi/Sa 08/01/2006 13:07 9 JAK3H-2-AA-B 25.10a,in J6H030000-548-BLK Beta: 07/25/2006 10:01 Scr: Alpha: AmtRec: #Containers: 1 UNSF3272 10JAK3H-2-AC-C 25.20q,in 07/27/06,pd J6H030000-548-LCS 03/22/05,r Scr: Alpha: Beta: 07/25/2006 10:01 AmtRec: #Containers: 1 11 JAK3H-2-AD-C UNSC1275 25.10q.in 08/10/06,pd J6H030000-548-LCS 04/28/06,r Scr: Beta: #Containers: 1 Alpha: 07/25/2006 10:01 pH < 20 mg 8/28/66 Comments: All Clients for Batch: Pacific Northwest National Lab, HC, 57671 384868, Pacific Northwest National Laboratory H91MC2AA-SAMP Constituent List: LCL: UCL: RPD: RDL:1.44E-01 Uranium ug/L H91MR2AC-MS: JAK3H2AA-BLK: Uranium RDL:0.144343 ug/L LCL: UCL: RPD: TAK3H2AC-LCS: UCL:130 RPD:20

Page 2

STI Richland Richland Wa.

RDL:0.144343

Uranium

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

LCL:70

ug/L

ISV - Insufficient Volume for Analysis

WO Cnt: 11 Prep\_SamplePrep v4.8.24 8/28/2006 8:22:25 AM

## Sample Preparation/Analysis

Balance Id:206113

DH UNat\_Laser PrpRC5015 SS Total Uranium by KPA

**5I CLIENT: HANFORD** 

Pipet #: \_\_\_\_

Sep1 DT/Tm Tech:

AnalyDueDate: 09/08/2006 Batch: 6237250

ug/L

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,DillonM 

ISV - Insufficient Volume for Analysis

Work Order, Lot, Sample DateTime	Tota Amt/U	11	Initial Aliquot Amt/Unit	QC Tr Prep [		Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
JAK3H2AD-LCS: Uranium RDL:	:0.144343	ug/L	LCL:70	UCL:130	RPD:20				
H91MC2AA-SAMP Calc Uncert Level H91MR2AC-MS:		Decay to	SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
Uncert Level JAK3H2AA-BLK:	(#s).: 2	Decay to	SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
Uncert Level JAK3H2AC-LCS:	(#s).: 2	Decay to	SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
Uncert Level JAK3H2AD-LCS:	(#s).: 2	Decay to	SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
Uncert Level	(#s).: 2	Decay to	SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B			
					Apr	roved By		Date:	

9/6/2006 4:27:30 PM

## ICOC Fraction Transfer/Status Report ByDate: 9/6/2005, 9/11/2006, Batch: '6237250', User: \*ALL Order By DateTimeAccepting

Q Batch Wo	rk Ord CurStat	us	Accepting		Comments
6237250			under State of the		
AC	Cnt1C	DillonM	8/28/2006 8:09	:18	
SC		antonsonl	IsBatched	8/25/2006 9:55:36 AM	ICOC_RADCALC v4.8.24
SC		DillonM	InPrep	8/28/2006 8:09:18 AM	RICH-RC-5015 REVISION 4
SC		DillonM	Prep1C	8/28/2006 9:55:55 AM	RICH-RC-5015 REVISION 4
SC		BarbosaH	Cnt1C	9/5/2006 2:20:29 PM	RICH-RC-5058 REVISION 7
AC		DillonM	8/28/2006 9:55	:55	
AC		BarbosaH	9/5/2006 2:20:2	29 PM	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt:3 ICOCFractions v4.8.18